The RUBBER AGE

The Only Twice - a - Month Rubber Publication

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FIRESTONE TIRE & RUBBER PLACES COMMON STOCK ON 6 PER CENT BASIS

Reports Net Profits for Year Ended Oct. 31 of $8,116,689 —Plans to Purchase New Machinery which will Increase Capacity of Akron Factory 10,000 Tires a Day

Directors of the Firestone Tire & Rubber Co., Akron, Ohio, Dec. 15 increased the dividend on the common stock from $4 to $6 annually. The common dividend of $1.50 a share is payable Jan. 20 to stockholders of record Jan. 15. Dividends of $1.50 on the 6 per cent preferred stock will be paid Jan. 15 to stockholders of record Jan. 1. A dividend of $1.75 on the 7 per cent preferred stock will be paid Feb. 15 to stockholders of record Feb. 1.

To Increase Capacity

Harvey S. Firestone, president, has announced plans for the immediate purchase of new equipment and machinery, which will give the Akron factory a capacity of 42,000 tires a day, compared with a present daily capacity of 32,000. This will make the production of the Firestone plant the largest in the world.

The report of the Firestone company for the year ended October 31, 1924, shows net profits, after depreciation and interest but before Federal taxes, of $8,116,689, which, after preferred dividends, is equal to $17 a share on the common stock. This compares with a net profit of $6,104,992, or $13 a share on the c ommon stock in 1923. Sales of the company and its subsidiaries totaled $85,610,004, against $77,593,149 in 1923.

The company *has* no indebtedness to banks, compared with a debt of $31,355,000 on October 31, 1920. During the last year the company, in addition to paying off bank loans, has retired $2,635,000 preferred stock which leaves $17,365,000 preferred stock now outstanding. The general balance sheet as of October 31, 1924 showed cash holdings of $4,445,367 against $8,153,647, an inventory valued year, bills receivable of $9,483,161, against $8,153,647, and inventory valued at $13,831,493, against $12,569,066. Accounts payable aggregated $3,636,840, against $2,191,521. The company reported no notes payable as of October 31, against a total of $5,770,000 notes payable on the same date last year. Total assets are $58,844,616.34.

In discussing the earnings of the company, Harvey S. Firestone said: "These profits are the result of many refinements, the development of economical manufacturing methods and plants and the great strides made in the reduction of our selling and distributing expenses." He predicted a prosperous year for the rubber industry in 1925.

Mr. Firestone also announced that the company has established an organization in Liberia, purchasing crude rubber.

BUSY WINTER AHEAD IN AKRON RUBBER PLANTS

Due to continued good weather and steady depletion of dealers' stocks, tire production in the Akron rubber factories at this writing is again hovering near the peak, 100,000 a day. Reports place the daily output at between 87,000 and 97,000 a day. These operations are at higher levels than were expected for this season of the year. Manufacturers are reported to be making no effort to build up surplus stocks of tires.

From present indications, operations during the current quarter will continue at substantially higher levels than in the last three months of 1923 and as high production has a decidedly favorable effect upon earnings of the rubber companies, it is expected that a large number of the companies will make fairly, satisfactory profits in the final quarter of this year.

The recent price reductions of from three to six per cent on high pressure tires are being offset by manufacturing and selling economies and although raw material prices, especially crude rubber, are gradually increasing, the earnings of the majority of the companies for the last quarter will probably show little effect of this.

C. B. Seger Named Director

C. B. Seger, chairman of the United States Rubber Co., was recently named a director of the New York Central Railroad to fill the vacancy caused by the resignation of Robert S. Lovett. Last August Mr. Seger was made chairman of the finance committee of the Union Pacific Railroad.

Acquires Coating Method

Edwin C. Wiese, Milwaukee, Wis., has assigned U. S. Patent No. 1,517,606 coyering a method of coating fabric with rubber to the Fisk Rubber Co., Chicopee Falls, Mass. The method consists in passing the fabric through a rubberizing calender under frictioning motion and with the lower roll warmer than the center roll.

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RUBBER TRADE ASSOCIATION OF N. Y. HOLDS ANNUAL BANQUET AT BILTMORE

Over 200 Enjoy Excellent Dinner—Guests Included Messrs. Viles, Crowther and Rutherford—Later Sees Return of Normalcy to Rubber Industry and Production Increase

One of the most enjoyable evenings spent every year by the crude rubber dealers, brokers and importers of New York is usually spent at the Annual Banquet of the Rubber Trade Association of New York. This year was no exception. The Annual Banquet of the Association was held on Thursday evening, December 11th in the music room of the Biltmore Hotel, New York City and everyone agreed that a most delightful evening was had in every way. Refreshments, food and speakers were all thoroughly enjoyed and the Committee in charge of arrangements, R. L .Baird and F. B. Peterson, are to be congratulated on the completeness of the arrangements.

Prominent Guests Present

The number of members and guests exceeded last years banquet, over 200 being present this year. Among the guests of the evening were A. L. Viles, Secretary of The Rubber Association of America, W. O. Rutherford, President of The Rubber Association of America, Hon. Henry Ashurst, U. S. Senator from Arizona, Rev. Dr. Warren Giles and G. R. Crowther, Propaganda Secretary of The Rubber Growers Association, London. Following the excellent meal, Charles T. Wilson, presiding in place of the President-elect, H. A. Astlett, who had left several days previously on a European trip, introduced the first speaker, Mr. Rutherford.

In his talk, Mr. Rutherford commented on the excellent financial condition of the various producing units in the rubber industry and saw much to be grateful for in the progress which rubber manufacturers had made during 1924. One indication of the status of the industry is that furnished by several rubber factories in the Akron district which have completed new buildings or made plans for additional buildings during the past year. Since the slump several years back, there has been little building activity by rubber factories and the above facts indicated to Mr. Rutherford the gradual resumption of rubber trade on a more normal basis. He predicted a 20% increase in units in 1925 and although the necessity for economy still existed, he felt that the next year would find the rubber industry in a state of normaley. In commenting about developments within the industry, he stated that the first epic in rubber progress was the machine-made tire and the second was the balloon tire, and although the latter required increased investments in molds and other equipment, it was a step which progress made necessary.

R. L. Baird
Chairman of Dinner Committee

Following Mr. Rutherford, Dr. Giles rendered what was considered by the following speaker one of the greatest orations ever delivered in New York. Senator Ashurst described Dr. Giles' address as the equal of any ever rendered by

(Continued on Page 186)

Over 200 Crude Rubber Brokers Attended the Annual Dinner of the Rubber Trade Association of New York, Inc.

At the Speakers' Table, right to left, are N. M. Behr, S. J. Goldsmith, J. P. Sullivan, R. L. Chipman, A. L. Viles, W. E. Bruyn, W. O. Rutherford, Charles T. Wilson, toastmaster; H. F. Ashurst, W. T. Baird, Rev. Dr. W. Y. Giles, F. R. Henderson, Senator G. R. Crowther, W. M. Morse, *India Rubber World*; E. W. Babcox, *India Rubber Review*; P. P. Pinto, THE RUBBER AGE.

GREETINGS!

THE RUBBER AGE wishes all its friends in the rubber industry a Merry Christmas and a Happy and Prosperous New Year! May every hope you cherish be fulfilled and every venture be successful.

INVENTORS ASSIGN VULCANIZER PATENTS

Ernest W. Melvin, Milwaukee, Wis., inventor of a vulcanizer unit, which was recently patented in the U. S. Patent Office under No. 1,517,517, has assigned the patent to the Fisk Rubber Co., Chicopee Falls, Mass. The patent covers a secondary member for an inner tube repair vulcanizer which comprises an inflatable spherical member adapted to be depressed to come into contact with a large area of the tube. Means are adapted to engage this spherical member to fasten it to a base to form an air chamber. The base is provided with an aperture which is in communication with an air valve and the air chamber.

Edward C. Wiese, also a resident of Milwaukee, is the assignor by mesne assignments to the Fisk company of a patent recently granted to him by the U. S. Patent Office under No. 1,517,327 on a vulcanization apparatus. The patent covers in part a continuous press comprising a first platen adapted to be advanced with the stock and a second platen cooperating therewith and adapted to be retracted to permit relative movement between the stock and the second platen in such a way as to advance the stock relative to the second platen.

The third patent, No. 1,517,560, also covers a vulcanizing apparatus invented by Daniel Edward Hennessy, who has assigned it by mesne assignments to the Fisk Rubber Co. It consists of a heater, an annular article therein and means adapted to form a fluid tight separation between the space within the inner periphery of the article and the space between the article and the heater without materially restricting the communication between the inner space and the exterior of the heater.

Tire Dealers Indicted

Charges of using the mails to defraud in connecion with the sale of stock in the Universal Tire Co., Philadelphia, Pa., a chain store enterprise, were made recently against George W. Odell, E. B. Doran and W. A. Riland in an indictment returned by the Federal Grand Jury. The company operated retail tire stores throughout the country, 16 of which were located in Philadelphia.

The company was incorporated in 1921 under the laws of Delaware, with a capital of $7,500,000, to sell tires and tubes manufactured by the International India Rubber Corp., South Bend, Ind., in which G. W. Odell owned a major part of the voting stock. The Universal company was thrown into bankruptcy in the U. S. District Court in Philadelphia on Jan. 10, 1923, and later the International India Rubber Corp. went into bankruptcy in South Bend.

T. G. SULLIVAN JOINS WISHNICK-TUMPEER CO.

Theodore G. Sullivan, Jr., for several years connected with the Clapp Products Co., a subsidiary of the E. H. Clapp Rubber Co., Boston, Mass., as technical sales

Theodore G. Sullivan, Jr.

engineer on Toron, recently joined the Wishnick-Tumpeer Chemical Co., 130 44th St., Brooklyn, N. Y., as technical manager of the rubber division. The Wishnick-Tumpeer company handles chemicals, oils and pigments, many of which are used in the rubber industry. Mr. Sullivan will do technical sales work, paying special attention to a complete line of pigments used extensively in the rubber industry.

To Make Rubber Clothing

The Interstate Clothing Manufacturing Co., Cleveland, Ohio, was recently incorporated to manufacture and deal in rubber clothing. Authorized capital is $100,000. Incorporators are Henry A. Bruce, Edward D. Sabin, Frank N. Wilson, Gladys Bruce and John F. Singleton, all of Cleveland.

CONVERSE RUBBER SHOE CONDUCTING CAMPAIGN

With a view to familiarizing the average basketball player with the merits of their product, the Converse Rubber Shoe Co., Malden, Mass., has inaugurated an advertising campaign which will cover a new field. Heretofore the Converse canvas rubber-soled shoe has been widely used by leading collegiate and professional teams, but the great market existing outside of these two channels of distribution is now to be made the objective of a concentrated drive.

The daily and Sunday newspapers circulating through the territory covered by this company's distributing organization will be used in the campaign. But in addition to these such magazines as *The Athletic Journal,* a publication written exclusively for coaches, *The American Physical Education Review,* the official organ of the American Physical Education Society, read chiefly by physical directors, and *The Southern Collegiate Sports,* circulating in southern collegiate fields, will be used.

That the scope of the advertising campaign is to be broad is indicated by the fact that small space has also been allotted to magazines in contact with high school players, including *The American Boy, Boy's Life* and *The Youth's Companion.*

Rubber Heel Patented

U. S. Patent No. 1,518,073 was recently granted to William Kaplan, Paterson, N. J., on a rubber heel made up of a number of concentrically arranged sections, an outer section, an intermediate section and an inner section. A fastening screw is passed through the inner section and engaged with the top element to which a plate formed with downwardly and outwardly projecting prongs is fixed. A disk is adapted to be forced by the screw against the prongs to move the latter into locking the outer section.

Grant Registers "Oelast"

The W. T. Grant Co., Lynn, Mass., and New York, N. Y., recently filed with the U. S. Patent Office its trade-mark "Oelast," which it claims has been in use since June 5, 1922 on inner tubes. The trade-mark has been registered under No. 203,311.

SEEK LOWER RATES FROM SOUTH ON SCRAP RUBBER

H. F. Masman, manager of the Traffic Department of the National Association of Waste Material Dealers, Inc., New York, reports that the Trans-Continental Freight Bureau has docketed for consideration under proposal No. 5364 a request for the establishment of a 50-cent rate on scrap rubber tires in carload lots from California points to Chicago, and a 65-cent rate to points east of Chicago. The rates are to expire 90 days after the date effective.

The N.A.W.M.D. recently took up with W. H. Paxton, general freight agent of the Southern Railway System, a further reduction in the rates on scrap rubber from southeastern points to northern destinations. At the present time rates are fixed on the same basis as the rates on scrap metals. It has been the contention of the N.A.W.M.D. that the value of scrap rubber entitles it to rates more in line with the rates on rags, waste paper and other paper stock. The Southern Railway System reported that it would take the case under consideration.

J. J. WATSON PREDICTS HIGHER TIRE PRICES

"Tire prices will have to be revised upward before manufacturers can realize appreciable profits on capital invested in the industry," said John J. Watson, Jr., president of the Lee Tire & Rubber Co., New York, recently. "Tire prices are now the lowest in history and the margin of profit is small.

"Crude rubber prices and the cost of other materials entering into the construction of casings are considerably higher now than when price cuts were made on balloon and high pressure tires in June this year. This reduction was followed later by a further cut averaging from 3% to 6%, initiated by one of the leading manufacturers and followed by others.

"It is generally understood," Mr. Watson continued, "that at the time the last price cut was announced, many companies reduced the quality of their product by constructing larger sizes with fewer plies, thereby reducing production costs. This method of endeavoring to meet the price reductions was found not feasible, and some have restored their tires to the former standard.

"In the case of Lee Tire & Rubber quality was maintained at its usual high grade. In fact, when the 3% to 6% reduction was made, more than 1000 dealers were asked by Lee whether the price cut should be met and the quality of the tires lessened. The unanimous opinion was that, instead of meeting the price reduction, the standard of the casing should not be changed, and that the price should be raised.

"After a careful survey of all factors we decided to advance prices 5%.

"I am of the opinion," added Mr. Watson, "that all tire manufacturers will sooner or later be obliged to take the same step adopted by our company.

"Our sales in 1924 will be the largest in the company's history, and while net profits will not be as great as last year they are considered satisfactory under the circumstances."

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SAYS RUBBER CORSETS ARE "DAMNABLE"

In a recent speech Sir Bruce Bruce-Porter, a famous English doctor, strongly denounced rubber reducing garments.

According to a cable to *The New York Times*, he said, "It is unnatural for women to have a figure which is described as boyish. To get that figure a belt has been put on the market which can only be called damnable. These appalling belts prevent the growth of important muscles and are becoming a national danger and a danger to mothers of the future. Girls of today pride themselves on getting rid of their mothers' Victorian corsets. They must beware lest they get into a worse bondage of the infernal band called a rubber corset."

Tire Patch Patented

The U. S. Patent Office has granted Patent No. 1,518,466 on a tire patch to Donal E. Stevenson, Indianapolis, Ind. The patent covers a process of arranging inside and outside fabric pieces cut on their respective biases with their weaves extending substantially at right angles, a fabric piece between the inside and outside pieces and flaps at the edges of one of the fabric pieces.

Strips of vulcanized rubber are laid at the joints between the fabric pieces and flaps and a sheet of raw rubber disposed against the surface of the inner fabric piece. The patch is subjected to a vulcanizing process whereby the exterior and interior surfaces are rendered smooth.

Colorado Rubber Formed

The Colorado Rubber Production Co., Colorado Springs, Col., was recently chartered to manufacture rubber goods. Authorized capital is $750,000 in shares of $10 par value. Incorporators are F. Wesley Kirk, Hortense S. Kirk and John M. Jefferies.

PRODUCTION OF TIRES INCREASED IN OCTOBER

With the exception of balloon tires and tubes, production in October increased but shipments declined, according to the latest statistical bulletin issued by the Rubber Association. Production and shipments of balloon tires and tubes showed an increase over September.

485,371 *Balloons Manufactured*

In October 485,371 balloon tires were manufactured by the 56 companies reporting, compared with 479,755 in September. Shipments totaled 454,117, compared with 398,324; inventory was 899,824 in October, against 850,430 in the previous month. Production of balloon inner tubes in October was 429,244, compared with production of 466,848 the previous month. Shipments were 402,103, against 357,765 in September. Inventory of balloon tubes was 887,417 in October, compared with 885,090 in the previous month.

Production of high pressure cord tires was 2,276,134 in October, against 2,077,359 the previous month. Inventory was 3,279,383 in October, 2,731,376 in September. Shipments totaled 1,779,232 in October, compared with 1,959,306 in September. October production of inner tubes for high pressure tires was 5,466,553, against 5,039,594 in September. Shipments of these tubes in October was 3,872,813, against 4,823,039 the previous month. October inventory was 6,464,783, compared with 5,153,778 in September.

Increased Production of Fabric Tires

Shipments of fabric casings decreased in October but inventory and production increased. October production was 1,115,571, compared with production the previous month of 973,764 tires. Shipments were 913,412, compared with September shipments of 1,046,609. Inventory of these tires in October totaled 1,159,173, against 942,599 in September.

Ten companies reported a production in October of 48,109 solid tires and 10,829 cushion tires. Shipments were 47,707 solid tires in October and 10,371 cushion tires. Combined production of solid and cushion tires showed an increase in October over September but shipments showed a decrease, raising the inventory.

The Rubber Association reports that crude rubber consumption in October was 46,045,252 lbs., compared with 43,920,689 lbs. in September, bringing the total for ten months of 1924 up to 375,077,032.

D. A. Grubb Quits India

D. A. Grubb has severed connections with the India Tire & Rubber Co., Megadore, Ohio, which he has served as secretary and general sales manager since the company was organized, in order to enter business for himself in Akron. Mr. Grubb has incorporated a new company for the manufacture and sale of bus and cushion truck tires exclusively. It is reported that these tires will be manufactured in the plant of the old Excel Rubber Co. at Wadsworth.

"RUBBER INDUSTRY MOST HIGHLY CONCENTRATED IN THE COUNTRY"

Economic Survey Made by Ohio Bell Telephone Co. Shows 1923 Tire Production was More than Double that of 1918—Says Production is Far from Capacity

The rubber industry is probably the most highly concentrated industry in the country, according to the Ohio Bell Telephone Co., which recently issued data gleaned through an economic survey.

As the rubber industry in Akron grows older and becomes established on a more business-like basis, a recurrence of the slump in 1920 and 1921 will become less likely, and instead the future holds greater promise, the survey indicated. In the near future the rubber industry is likely to become even more concentrated in the large companies already established in Akron and the immediate vicinity, particularly the tire industry.

"Ranking next to the iron and steel in all important aspects is the manufacture of rubber, probably the most highly concentrated industry in the country," the Ohio Bell survey report states.

Status of Akron in 1914

"In 1914, 54 per cent of the value of all rubber products made in the United States came from Ohio, and 46 per cent from the city of Akron alone. At that time nearly 90,000 persons, including wage-earners, clerks and officials, were employed in rubber factories throughout the state, of which 60,000 were wage earners. The corresponding figures for Akron were 77,000 and 54,000. The total value of the output amounted to $550,000,000, or over a tenth of all manufactured articles.

"No comparable census figures are available for the past four years, but none are necessary to convince us of the decided slump occurring in the latter part of 1920 and 1921. This condition was, no doubt, the result of great over-production, together with a decreased demand and a sharp decline in prices. The year 1922 witnessed a partial recovery and the volume of output per worker was considerably higher, showing greatly increased efficiency. None of the plants were running at capacity, however, and more of the smaller establishments were forced out of business."

Record Production in 1923

The survey found that a new high record was set for tire production in 1923, over 45,000,000 casings being manufactured and distributed throughout the whole country, which was over twice the 1918 output. Ohio's share in this huge figure was about 50 per cent, but the resulting prosperity was not as pronounced as might be expected, the report points out. "Due to the great reduction in the price of rubber, which has been more phenomenal than in any other line of manufacture, the value of the output in the state was only about three-fifths that of 1919," the reports says.

Despite the fact that workers have shown increased efficiency and fewer men have been employed, production is still far from capacity, it was shown. It is now estimated that only about three new tires are required annually for each machine in the United States, as compared to five not many years ago. This is ascribed to the improved quality and increased mileage of tires.

"In March, 1924," the report says, "Akron's daily output was about 90,000 tires and that for the rest of the state, about 20,000. At this rate that production for the year would be about 30,000,000 tires and for the country as a whole, about 60,000,000, which is about the number that would naturally be required. This would indicate that the manufacturers are profiting by their past mistakes and are not over-producing as is generally done in the spring of the year."

Twenty-four times a year we take space in this publication to blow our own horn, develop trade and otherwise pursue our private ends—this week we decline to be zinc oxide manufacturers seeking whom we may devour. We lay aside the gentle word to decoy the unwary—in a voice real and human we salute our friends and wish them all a Merry Christmas and a Happy New Year.

AMERICAN ZINC SALES COMPANY

Columbus, O. St. Louis, Mo.
New York, N. Y.

U. S. RUBBER EXPECTED TO SHOW GOOD PROFITS

It is expected by many that the United States Rubber Co. will show earnings this year of approximately $5.00 a share on the common stock, compared with $2.28 in 1923. It will undoubtedly be the best year the company has had since 1920. Profits in the first six months totaled $4,422,487, equivalent, after preferred dividends, to $2.04 a share on the $81,000,000 common stock.

Monthly profits in the third quarter were higher than the $737,000 average from January to June, and it is confidently expected that the last quarter will make a good showing. The major part of the improvement in the U. S. company's business has been in tires. In 1923 tire sales were $61,000,000, or one-third of total sales, on which the company made no profit. This year, even in the first half, when tire prices were at the lowest level in history, profits were approximately $900,000.

During 1923 much attention was given the tire division; branches were consolidated and unprofitable agencies eliminated. Mechanical and footwear sales, although slightly under 1923 figures, are said to be satisfactory. The U. S. Rubber Co. is steadily improving its financial condition, and the outlook for 1925 is very promising.

To Sell Rubber Goods

John L. Handy, Inc., New York City, has been incorporated with $100,000 authorized capital to conduct a general brokerage business in rubber goods. George Norris, W. L. Bryant, and G. Potts, 115 Broadway, New York, are directors and subscribers. Williamson & Bayles, 115 Broadway, are attorneys for the corporation.

Issues Statistical Charts

The Rubber Association of America recently issued a statistical bulletin in new form which contains graphs showing the seasonal variation in shipments of pneumatic tires, including both original equipment and dealer shipments, for the years 1921, 1922, 1923 and nine months of 1924. The years 1923 and 1924 show less seasonable variation than previous years. March was the best month of the year 1923; shipments that month were about 120 per cent of the average month. August was the best month of this year when shipments were about 120 per cent.

Original equipment shipments and shipments to dealers are also analyzed separately in the bulletin. Graphs showing inventory, production and shipments of both motorcycle and bicycle tires, as well as a graph, which makes it easy to compare the shipments of rubber heels with leather boot and shoe production, are also included in the new bulletin.

AVERAGE LIFE OF TIRE IS ALMOST TWO YEARS

Tires continue to give better and better service. Four years ago each car was using about three tires per year. The average life of a tire at that time was one year and four months, according to a study made by the Cleveland Trust Co. Since that time the average life of tires has risen to 2.7 tires per car per year at the beginning of 1923 and to 2.3 tires per car per year in 1924. The average life of a tire at the present time is calculated at almost one year and nine months.

Burdick Tire Bankrupt

Harry Sheridan, referee in bankruptcy for the Burdick Tire & Rubber Co., Noblesville, Ind., recently handed down a decision holding the company to be insolvent. Liabilities are said to be about $200,000. Creditors of the company will meet soon to file their claims and appoint a trustee. At the present time the factory is in operation and is producing several hundred tires a day.

Register "Dutch-Brand"

Van Cleef Bros., Chicago, Ill. have registered with the U. S. Patent Office their trade-mark "Dutch-Brand," which consists of a square containing the words below which appears the head of a Dutch girl in a circle. Van Cleef Bros. claims that this trade-mark has been used since January, 1911, on adhesive cements and pastes, rubber cements, liquid rubber, tread filler, cut filler, rubber patches and tire fluid.

"IMPOSSIBLE TO SHIP TO AKRON IN TANKERS"

It never will be practical to ship rubber to Akron in tank cars in the form of latex, according to Dr. W. C. Geer, vice president of the B. F. Goodrich Co., in a recent speech before the members of the Akron Traffic Association. Standing behind the speakers' table, Dr. Geer took a quantity of raw rubber latex, poured vinegar on it, mixed it into a form of crude rubber and passed small pieces to his audience.

"It would require tank cars that are proof against freezing to bring latex into Akron and there would have to be a sufficient number of cars to transport 100,000,000 gallons of liquid latex yearly. I am convinced that this would not be practical and that we must transport our raw rubber in solid form as in the past," said Dr. Geer.

Miller Has Two Fires

Two fires in two days broke out in the factory of the Miller Rubber Co., Akron, Ohio. In the first blaze one man was burned and three others slightly affected by gases when spontaneous combustion caused a fire in the cement tank of the lead room. Loss was estimated at $300. A second small fire, causing damage of $100, occurred when a short circuit ignited framework in the spreading room.

McLean Factory Sold

Under a court order, the property and chattels of the McLean Tire & Rubber Co., East Liverpool, Ohio, was sold recently by Deputy Sheriff George Wright to J. Sandels Morrow as trustee for the property committee of the bondholders. The purchase price was $47,000. The property and real estate had been appraised at $69.585 and the chattels approximately $38,000. The sale was for cash.

The purchaser did not say whether or not the property would again be placed in operation. Original action against the company was by a Cleveland firm which asked the court to appoint a receiver. Then the Continental Trust Co. of Pittsburg entered the case.

Boilers in the factory were not sold, as the court had ordered these returned to the Erie City Boiler Co., Erie, Pa.

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DOVAN

BRITISH COURT READS "RELIANCE" DECISION

(Special to THE RUBBER AGE*)*

A decision of utmost importance to the rubber industry has just been delivered by Justice Tomlin in the British High Court of Justice. It concerned a dispute over the infringement of the trade name of one rubber company by another company. The plaintiff, the Reliance Rubber Co., Ltd., claimed relief by injunction against the defendant, the Reliance Tire Co., Ltd.

The business of the plaintiff was established in 1889 under the title of Reliance Rubber & Hardwood Co., but the words "and Hardwood" were dropped from the title some years ago, and in September, 1919, the plaintiff company was incorporated as a private limited company by the three brothers who then owned the business. Circulars and price lists had been issued for many years by the plaintiff company in which the word "Reliance" was used.

Two Firms With Same Name

Before February, 1922, there existed a concern trading in rubber tires and rubber trolley wheels and bearing a name in which the word "Simplex" formed the principal feature. In or about February, 1922, that concern went into liquidation and sold its business to a private company formed by one Flavelle and his friends and called the Reliance Tire Co., Ltd.

At the conclusion of the arguments, Justice Tomlin took time to consider his decision, regarding the action as of great importance. In delivering judgment, some days after hearing the case, the judge said it was established by the evidence to his satisfaction that the business of the plaintiff company and its predecessors had been commonly known in the trade as "the Reliance." Further, he found as a fact that in the rubber trade the word "Reliance" when used in connection with rubber goods had come to indicate the goods supplied by the plaintiff company and its predecessors, and, in particular, he found that in the trade generally the word "Reliance" connected with any type of tire was understood to indicate tires supplied by the plaintiff company.

Mr. Flavelle, who had promoted the defendant company, had stated in the box that he did not know of the plaintiff company's existence at the time when the defendant company was formed, and that the name of the defendant company was his suggestion, and that he chose "Reliance" as a common English word.

The question was one of fact, and he came to conclusion on the evidence that the adoption and use by the defendant company of its name in its present form in connection with the rubber trade was calculated to deceive by occasioning a confusion between the two businesses.

There would be an injunction to restrain the defendant company from carrying on business in the rubber trade under its present name, or under any name which colorably resembled the name of the plaintiff company, or was calculated to induce the belief that the business of the defendant company was that of the plaintiff company, or was a branch or department of or connected with that of the plaintiff company. There would also be an injunction to restrain the defendant company from selling or advertising or offering for sale any tire as a "Reliance tire."

The judge also ordered the defendant company to pay the entire costs of the action.

RUBBER DISCS USED TO SUPPORT H.C.S. MOTOR

The motor in the new H.C.S. taxicab recently announced by the H.C.S. Motor Car Co. rests on rear supports of thick rubber discs. These rubber discs are said to absorb all chassis jolts and jars, protect the motor, and insulate the cab and passengers from all vibration and noises that originate in the chassis.

Confer on Brake Lining

The Division of Simplified Practice of the Department of Commerce held a conference at Washington with manufacturers of brake lining and automobiles on December 18. The meeting was called to consider reducing the number of sizes of brake linings. Invitations were sent by the Division to some 200 companies, associations and Individuals.

TO YOU–

A Merry Christmas
and
A Happy New Year

Once a year, it is well to forego the repeated insistence on the merits of our product and to wish the best that Yuletide can bring in happiness and prosperity to the entire Industry.

U. S. RUBBER RECLAIMING CO., Inc.

New York Buffalo

TRADE COMMISSION FILES COMPLAINT AGAINST FISK

The Federal Trade Commission recently instituted formal proceedings against the Fisk Rubber Co., 250 West 57th St., New York, and Chicopee Falls, Mass. The proceedings aim to compel the Fisk company to divest itself of the stock and assets of the Federal Rubber Co. as of April 25, 1916. On this date the Fisk Rubber Co. acquired a controlling interest in the stock of the Federal company. The acquisition, according to the findings of the commission, was a violation of the Clayton Act.

The Federal Trade Commission has found that the Fisk company acquired approximately 51 per cent of the stock or share capital of the Federal Rubber Co. of Cudahy, Wis., which had previously taken over the assets, including the factory, of the Federal Rubber Manufacturing Co., also located in Cudahy. The Fisk company has 30 days in which to file an answer to the complaint.

Chairman Van Fleet of the Trade Commission dissented to the filing of the complaint on the ground that there was no unfair, oppressive or monopolistic practice in the activities of the Fisk company. The case against the rubber company, in the opinion of Chairman Van Fleet, "rests solely on what might be termed a technical violation of the Clayton Act." The chairman added that the consolidation was in no way offensive in the meaning of the Sherman law nor to the spirit of the anti-trust laws but the offense "rests solely in the method of acquisition which was accomplished in 1916."

"In 1923 there were in the United States 528 establishments engaged primarily in the manufacture of rubber products and 160 such concerns engaged primarily in the manufacture of rubber." Chairman Van Fleet said.

Ora Rubber Buys Plant

The Ora Rubber Products Co., Kansas City, Kansas, has purchased from the Minerals Recovery Co. an acre of ground and six steel buildings on Santa Fe Drive near Alameda St., Denver, Col. As soon as machinery can be installed the company will engage in the manufacture of rubber floor tile, shingles, paving blocks and other rubber products.

The buildings are one-story structures of substantial construction, containing 30,000 sq. ft. of floor space. The officers of the Ora Rubber Products Co. are Charles Ora, president; J. H. Banks, secretary; and Charles B. Humphreville, treasurer.

Gates Registers "Peerless"

The Gates Rubber Co., Denver, Col., has registered with the U. S. Patent Office under Ser. No. 192,201 the trademark "Peerless" which it has been using on its tires and tubes since September, 1923. The registration is not subject to opposition.

1924 RUBBER PRODUCTION PLACED AT 414,000 TONS

It is estimated that the world's rubber production in 1924 will be 414,000 tons, of which amount 310,477 tons had been shipped at the end of September, an increase of about 5,024 tons as compared with the same period of 1923.

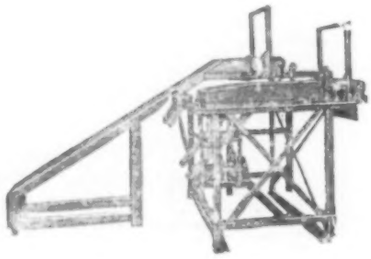
It is expected that the United States will require 315,000 tons this year, according to the Bankers Trust Co. of New York. At the end of September 224,741 tons had been used. In 1913 the United States imported 51,732 tons of rubber at a cost of £15,564,000. Should this country require 350,000 tons in 1925 at slightly over 1s 6d per pound the cost would be £60,000,000. In other words, the United States would be able to import seven times the amount of rubber at about four times the pre-war cost.

Lee Tire at Capacity

Operations at the plant of the Lee Tire & Rubber Co., Conshohocken, Pa., are at capacity. The company recently announced at a conference of district managers that it will solicit high-grade dealer accounts exclusively.

Made District Manager

J. H. Wilson, who for the past three and a half years has been selling Michelin tires in the Michigan territory, has been appointed district manager for Michigan by the Michelin Tire Co., Milltown, N. J.



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Permits continual operation of our Bolton Vertical Bias Cutter. Increases Production and offers a most efficient method for handling cord or fabric plys.

SPADONE MACHINE CO., Inc.
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Foreign Representative
FRANCIS SHAW & CO., LTD., Bradford, Manchester, Eng.

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For Artificial Leather, Oil Cloth, Carriage and Automobile Covers
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OFFICE, No. 83 EXCHANGE PLACE
PROVIDENCE, R. I.

The Carter Bell M'f'g *Co.*
Highest Grade
RUBBER SUBSTITUTES
White, Brown & Black
150 Nassau Street New York

RUBBER LIFE-SAVING APPARATUS PATENTED

The U. S. Patent Office has granted a patent to Harold Morely, Sale, near Manchester, England, on a rubber life-saving apparatus. Patent No. 1,517,745 covers an apparatus consisting of an inflatable rubber mattress, provided with through tubes spaced at the desired distances apart to form tie members. The tubes and mattress is molded in one piece. An all-around band of webbing is embedded in the rubber and means are connected to this webbing at each corner of the mattress to connect a number of mattresses together to form a raft. Metal hooks equally spaced are secured to the webbing to secure ropes for hand holds. A netting covers the mattress to enable persons to cling to its surface.

Ajax on 24-Hour Basis

The Ajax Rubber Co. is operating both its Trenton, N. J., and Racine, Wis., factories 24 hours a day but despite these capacity activities is unable to catch up with its current orders for tires. No curtailment in production is anticipated during the balance of the year and it is likely that the Ajax company will continue throughout the first quarter of 1925 to maintain capacity output.

The margin of profit on tire sales is being gradually increased, it is said, with the result that earnings are showing a perceptible improvement. Returns for the third quarter were substantially better than for the preceding one and Ajax is certain to report a net income for the last half in excess of $143,517 or 33 cents a share, earned in the first six months of 1923.

Restriction Not Permanent

(Special to THE RUBBER AGE*)*

The Governor of the Federated Malay States, in an address to the Federal Council of the Federated Malay States, towards the end of November said: "There is nothing in the rubber situation which would justify the Government recommending the repeal of the present restrictions, which must be regraded as a temporary necessity to enable the industry to organize itself to meet conditions when changed."

The Governor also warned planters not to allow themselves to drift into regarding restriction as a permanent condition. "When its object is attained," he concluded, "it ought to be obolished."

Assigned Mold Patent

U. S. Patent No. 1,517,850 covering a mold has been assigned by the patentee, George L. Mather, Milwaukee, Wis. to the Fisk Rubber Co., Chicopee Falls, Mass. The tire mold comprises a pair of cooperating mold sections, a plurality of tread plates, projecting side wall molding surfaces on the sections and reciprocating means independent of the mold sections adapted to contract the plates which are engaged by the mold sections.

SAMSON TIRE & RUBBER TO INCREASE CAPACITY

The Samson Tire & Rubber Corp., Los Angeles, Calif., is erecting two Westype steel buildings at its factory in Compton, according to an announcement by H. W. Thorne, manager of the industrial department. The expansion program, which involves the expenditure of more than $100,000 in buildings and equipment, is the fourth in three years. The company expects to double its capacity for the fourth time, each addition having increased production to this extent.

Construction of the two new buildings was started recently by workmen of the Union Iron Works. The manufacturing operations will not be interrupted, although partitions and present walls will be removed. New quarters will be provided for the executive offices of the company. The south extension will be 64 x 88 and the north extension 30 x 244, both structures being of Westype steel sawtooth design.

According to P. J. Messerschmidt, production engineer of the Samson company, new machinery and equipment, including tire-building machines, calenders and mills, is being shipped in order to double the production of tires. Products of the company are distributed at the present time on the Pacific Coast but will also be sold east of the Rocky Mountains after Jan. 1.

The company anticipates an excellent business in 1925.

Perfect Beads

Entire freedom from bead trouble in the construction of straight side tires is assured by the use of either National "(Patent)" High Tensile Strength, Flat Woven, Bead Braid or our new (Pratt Patent) Bead Cables. These cables, made to dimensions specified, have seven strands, yet only one piece of wire is used without soldered, welded or brazed joint.

Write for working samples of either National flat braid or Pratt cables (no charge to tire manufacturers) and full information as to our products and service.

Our engineering department tests beads and furnishes complete confidential reports as to their stretch, set and bursting point, without charge. Inquiries solicited regarding this special service.

National Standard Company
Niles, Michigan

Est. 1900 Inc. 1919

THE KUHLKE MACHINE CO.
Formerly Jones & Kuhlke

AUTOMOBILE TIRE MOLDS and CORES

GENERAL MACHINE WORK

Akron, Ohio

CARBON BLACKS

OF HIGHEST QUALITIES

Godfrey L. Cabot, Inc.

940 Old South Bldg. — BOSTON
611 Metropolitan Bldg. — AKRON

STOCKS IN

AKRON
BOSTON
CHICAGO
CINCINNATI
CLEVELAND
LOS ANGELES
NEW YORK
PITTSBURGH
SAN FRANCISCO
ST. LOUIS
TRENTON

AND PRINCIPAL FOREIGN CITIES

NATIVE PRODUCTION IN WEST BORNEO PROFITABLE

(Special to THE RUBBER AGE*)*

Although the Stevenson Restriction Scheme does not apply to West Borneo, the European-owned rubber estates—principally Dutch—have been very unsuccessful financially. It is therefore astonishing to find the native rubber producers in the same country growing more prosperous.

The trees of the natives are planted on any sort of ground, and many gardens near Pontianak are flooded at every high tide. The trees do not seem to be harmed. They are planted at very irregular distances apart, some as close as 4 feet, others three times as far, but on an average about 7 feet. No weeding is done.

Rubber Collected on Sharing Basis

The rubber is collected on the sharing basis. Near Pontianak the workers tap, collect the latex, and make it into wet rubber. This rubber carries more than 20 per cent water, and is in evil-smelling sheets about an inch thick. It is sold almost immediately upon production, the greater part of it finding its way to Singapore, where it is re-treated and turned into smoked sheets or crepe. During October this wet rubber was selling in the market to Chinese at about nine pence (18 cents) per pound, the workers being paid about four pence per pound for their labor. In other districts, however, where labor was not so plentiful, the workers received half the selling price of the rubber. On these terms the owners of the gardens obtained good incomes without any risk, and the workers are so highly paid as to cause great difficulty to other industries requiring cheaper labor.

Despite all the warning of rubber experts, the trees do not look overtapped nor unhealthy. The financial results of the native rubber industry appear to be so good that nearly everybody in West Borneo is busy planting. For hundreds of miles up the rivers the same conditions prevail. The production is rapidly increasing, and will increase at an even greater rate within the next few years.

THINKS MEXICO OFFERS RUBBER POSSIBILITIES

The opportunities for the expansion of the rubber industry in Mexico are unlimited, according to Edward Hoeflich, publisher of the *Mexico Daily Record*. In an address before the Long Beach (Cal.) Board of Realtors, Mr. Hoeflich characterized our neighboring republic as a safe and stable land for the investment of American Capital.

"The opportunity for rubber plantations in the southern portion of the country are unlimited, especially in view of the fact that this country uses about three-fourths of the world's rubber output and keeping in mind the further fact that immediately after the war England cornered about 57 per cent of the crude rubber plantations of the world."

CRUDE RUBBER IMPORTS DECREASED IN NOVEMBER

According to statistics recently issued by the Rubber Association of America, crude rubber shipments to the United States were 28,660 tons, compared with 37,157 tons in October. But compared with the imports in November, 1923, when 13,392 tons were shipped the imports have more than doubled. November figures bring the total importations for the 11 months ended Nov. 30 up to 289,678, compared with an 11 months total last year of 271,987½.

Included in the shipments of 26,427 tons of plantation rubber were 10,945 tons from Singapore; 3,907 tons from London; 2,835 tons from Colombo; 2,532 tons from Belawan-Deli; 2,512 tons from Penang; and 1,437 tons from Pt. Swettenham. Six tons of Manicoba rubber were imported in November and 597 tons of Africans. Paras included 244 tons from Para, 930 tons from Manoas and 52 tons from Iquitos, a total of 1,226 tons. During the month 237 tons of Centrals and 167 tons of Guayule were imported.

The importation of Balata from various sources aggregated 167 tons, waste 74 tons and miscellaneous gums 230 tons.

The 25,896 tons of plantation rubber which arrived at Atlantic ports included 24,333 tons which came in at New York, 1,184 at Boston and 379 at Philadelphia. Los Angeles received 523 tons and Seattle 8 tons, making a total of 531 tons of plantation rubber received at Pacific ports.

Shipment Just Received

"RUBBER MANUFACTURERS' HANDBOOK."

By W. GUY PINKNEY and P. WATKINS

Edited by HERBERT STANDRING

This Handbook comprises, in handy form, Details, Tables and Formulae necessary for arranging Mixtures and Tests for Compounds and Manufacture.
It contains practical data, carefully worked out, which have been found necessary in the actual manufacture of rubber, brought up to date, and should be available for reference in every department of a Rubber Works.

SYNOPSIS:

Among the comprehensive details given in this book are:—

Atomic Weights and Analysis of Rubber Chemicals.
Heat Conductivity and Absorbing capacity of Materials.
Tensile Strength, Hardness and Specific Heats of Materials.
Composition of Principal Minerals and Compounding Ingredients.
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Weights, Specific Gravities and Prices of Compounding Ingredients.
Equivalent Temperatures and Cures.
Tables of Dimensions.
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Conversion Tables, Washed and Crude Rubbers.
Details of Belting for various purposes.

Price $3.00 ***(Post Paid)***

Send orders to:

THE RUBBER AGE

225 Fourth Ave. **New York City**

COAST TIRE & RUBBER ANNOUNCES FULL PAYMENT OF ALL CREDITORS

Re-organized Company has also Paid All Government, State, County and City Taxes Due through the Assistance of W. H. Weilbye—Increased Production Planned

With all creditors paid one hundred cents on the dollar, the reorganized Coast Tire & Rubber Co., Oakland, California, recently announced that this is their Christmas present to the stockho'ders in the concern. The company also has paid all Govenment, State, County and City taxes, delinquent and due, it is pointed out.

J. C. Hughes, president and Luis S. Budo, vice-president have accomplished this result through the financial assistance rendered by W. H. Weilbye of Oakland to the extent of more than $100,000. Weilbye is a retired architect, builder and real estate owner.

W. H. Weilbye has Invested $100,000

Discussing the deal, Hughes said: "Mr. Weilbye has become so interested in the future of this company that he has shown his confidence in it and put $100,000 into the treasury which has relieved the institution entirely of its debts and put it in a position to carry out its contemplated expansion program in full. While the factory has been in continuous operation since the organization of the new corporation, this financial assistance will enable the company to double its present output at once.

"Mr. Weilbye's financial record in California, is sufficient faith of his sincerity in this matter. He has assured us that he is willing to pledge far more than $100,000 if it is required by this company."

In the opinion of tire trade authorities, the confidence of Weilbye in the management and policy of the Coast company, coupled with the support of the stockholders places the company in an enviable position to continue and increase the satisfying business that they are doing.

The new arrangement amounts to insurance to dealers throughout the west that the company's products will continue uninterruptedly up to the present standard.

The officers of the new company have been complimented by financial agencies for the able manner in which they have salvaged the assets of the defunct Coast Tire & Rubber Co., placing the reorganized company on a paying basis in a short period.

Explaining his interest in the affairs of the company, Weilbye said: "My investment is more than a financial one: it expresses my desire to assist in the rehabilitation of an industry that should bring credit and profit to the east bay cities as the home of a great nationally known plant."

An increased schedule of production in the factory to take care of the demands of dealers was announced from the company's offices.

Sues Odell Rubber

Hilton Hammond recently filed suit in Superior Court against the Odell Rubber Co., South Bend, Ind. George A. Crane, receiver for the Odell company and James Cameron. The plaintiff asks payment of $11,099.85 and foreclosure of a mechanic's lean. He alleges that he was under contract to furnish materials and labor for the construction of a factory building for the Odell company and that he completed the work prior to the appointment of a receiver on Dec. 3, 1923. It is also stated in the complaint that James Cameron claims to have an interest in and lein on the real estate of the Odell company, which the court is asked to set aside for the alleged prior claim of Hilton.

Novel Tire Patented

Emil Linderme, Cleveland Heights, Ohio, is the inventor of a tire on which Patent No. 1,518,529 was recently granted in the U. S. Patent Office. The tire comprises a casing having a flat circumferentially channelled periphery which is undercut. A set of circumferentially spaced lugs with truncated cone-shaped heads are arranged upon the bottom of this channel and disposed in staggered relation. The tread member has a flat inner face provided with recesses to snugly receive the heads of the lugs and inwardly directed annular ribs arranged about the recesses to engage over the truncated heads of the lugs to interlock the casing and tread member.

"Stiks-It" Registered

The Automobile Specialty Mfg. Co., Inc., Harrisburg, Pa., recently registered in the U. S. Patent Office under No. 192,836 the trade-mark "Stiks-It", which the company claims it has been using since July 1, 1923 on inner tube patches.

FIRST WITH REPORTS OF RUBBER ASSOCIATION MEETING

The first complete details of the annual meeting and banquet of the Rubber Association of America, to be held in New York on January 5, will be published in the January 10 issue of THE RUBBER AGE—fully two weeks before any other paper in the field. First—as usual !

ROESSLER & HASSLACHER HOLDS SALES CONVENTION

Branch managers and salesmen of the Roessler & Hasslacher Chemical Co., held a convention recently at the main offices of the company, 709 Sixth Ave., New York City. Representatives attended from Boston, Philadelphia, Pittsburgh, Cleveland, Chicago, San Francisco, East Liverpool, Ohio, and Trenton, N. J.

The convention lasted five days. Daily sessions were held at which various phases of the company's business were discussed. Features of the entertainment tendered the salesmen included a theater party and an informal dinner. The delegates were entertained at the New York Athletic Club on one evening. The delegates were also guests of the Roessler & Hasslacher Bowling Club at the Chelsea Bowling clubhouse.

Goodrich Gets Heel Patent

John R. Gammeter, Akron, Ohio, inventor of a rubber heel and sole, recently patented in the U. S. Patent Office under No. 1,518,910, has assigned the patent to the B. F. Goodrich Co., Akron, Ohio. The invention consists of a ground-contacting member for footwear having a tread part of soft-rubber composition and an attaching part of stiff-rubber composition overlying substantially the whole top area of the tread part. The two parts are integrally united by vulcanization.

FIVE DIRECTORS TO BE NAMED AT R.A. MEETING

Five directors are to be elected at the annual meeting of the Rubber Association of America to succeed the following directors whose terms will expire on January 5 the date of the meeting: E. H. Broadwell, Fisk Rubber Co.; John S. Lowman, Philadelphia Rubber Works Co., Philadelphia, Pa.; G. M. Stadelman, Goodyear Tire & Rubber Co.; J. C. Weston, Ajax Rubber Co., Inc.; and Seneca G. Lewis (deceased).

The committee on nominations composed of F. C. Hood, G. B. Hodgman, B. G. Work, H. E. Sawyer and H. T. Dunn is submitting to members the names of ten firm representatives, five of whom are to be elected as directors.

The nominees selected by the committee follow: E. H. Broadwell, vice president and general manager, Fisk Rubber Co., Chicoppee Falls, Mass.; E. H. Clapp, president, E. H. Clapp Rubber Co., 211 Congress St., Boston, Mass.; C. A. Daniel, president, Quaker City Rubber Co., Wissinoming, Pa.; A. S. Funk, general manager, LaCrosse Rubber Mills, La Crosse, Wis.; C. C. Gates, president, Gates Rubber Co., Denver, Col.; J. A. MacMillan, president and general manager, Dayton Rubber Mfg. Co., Ashland, Ohio; F. A. Seiberling, president, Seiberling Rubber Co., Barberton, Ohio; G. M. Stadelman, president, Goodyear Tire & Rubber Co., Akron, Ohio; and J. C. Weston, president, Ajax Rubber Co., 220 West 57th St., New York City.

CLEVELAND LINER DOUBLES CAPACITY

Increased demand for the well known Blue Processed Non-Sticking Liners has resulted in the necessity of additional factory space at the plant of the Cleveland Liner & Mfg. Co., at 5508 Maurice Ave., Cleveland, Ohio. Alterations and additions just completed will enable a 50% increase in production and will permit of more space for storage and office use. New 90 in. spreaders and larger mixers have also been installed. These changes, according to F. A. Pope, president, enable the company to handle the rapidly increasing number of orders being received from many rubber manufacturers.

AMERICAN HARD RUBBER OBTAINS THREE PATENTS

The American Hard Rubber Co., 11 Mercer St., New York City, has been assigned three patents covering a machine for making articles of plastic compounds of different colors. The machine was recently patented in the U. S. Patent Office by Alfred G. Butterfield, Butler, N. J., under Nos. 1,516,841 - 842 and 843. Mr. Butterfield has named the American company as his assignee.

The first patent covers a machine comprising a number of feed screws, each of which is arranged to feed a compound of a different color, means for incompletely mixing or streaking the compounds together, a number of independent converging passageways, means for forcing the incompletely mixed compounds through the passageways and a discharge block having an orifice through which the compounds are forced to produce a grained effect. The second patent covers the feed screws used in the machine, and the third patent is on a chamber, the temperature of which is controlled and through which the plastic compounds are fed.

ASSOCIATIONS TO MEET AT 1925 CHEMICAL SHOW

A joint meeting of close to twenty technical and commercial associations, to be held in conjunction with the Tenth Exposition of Chemical Industries during the week of Sept. 28 to Oct. 3, 1925 at Grand Central Palace, New York, is being planned. It is expected that a program of common interest to members of all the associations will be worked out and that the big joint meeting will follow individual meetings of the various associations in New York during the week of the Chemical Exposition.

Only big broad problems of chemical production, distribution and consumption will be taken up owing to restricted time and the diversified interests of those attending the meeting. If the big meeting at the Exposition during September-October of next year proves altogether successful, the idea will probably be expanded in 1926 to a still larger conference of all chemical, chemical equipment and engineering, and the chief chemical consuming groups in this country.

BALLOONS MAY REDUCE CAR WEIGHT

Balloon tires will probably be the cause of considerable changes in the design of automobiles. It is believed, says *The Automotive Manufacturer*, that the additional cushioning effect of the low-pressure tire will make it possible to redesign the whole chassis and perhaps reduce the weight of the car. This, in turn, will produce a saving of materials which may aid in reducing automobile prices. It has also been stated that four-wheel brakes have no great advantage when balloon tires are used because of the better traction they afford with consequent increased braking efficiency and reduced tendency to skid.

The use of chains may be greatly curtailed but, on the other hand, the use of snubbers and shock absorbers may be increased. The reduction of car weight may permit the use of small engines with a resulting saving in fuel consumption. Many possibilities are opened up through the use of the new tires.

With the 1925 Chemical Exposition some ten months in the future, a Chemical Exposition larger than the last one in 1923, is already assured. Redoubled interest in the exposition next year is already in evidence for it is believed that the number of new products, machinery and instruments which will be on display will be greater than in any previous year. Numerous regrets have been expressed that no Chemical Exposition was held this year, the first break in the annual exposition since 1915, and it is believed that considerable new business, especially for export, was not placed as a result of the omission. At the same time, early indications point to the 1925 Chemical Exposition as the largest and broadest ever held in the United States. Thus far in 1924, the management is reported to have declined consideration of scores of requests from foreign firms who have expressed a desire to exhibit at the American Chemical Exposition.

B. F. Goodrich Broadcasts

On Dec. 2 the B. F. Goodrich Co. recently won the distinction of being the first rubber company to broadcast extensively by radio when a concert was given by the Goodrich Silvertown Cord orchestra personally directed by Joseph Knecht, director of the Waldorf-Astoria orchestra, from station W E A F, New York. Six other stations at Boston, Providence, Buffalo, Pittsburgh, and Philadelphia carried the program. Concerts will be given every Tuesday evening between 10 and 11 o'clock.

Chemical Paper Moves

On Dec. 20 the editorial offices of *Industrial & Engineering Chemistry*, organ of the American Chemical Society, were removed from 810 Eighteenth St., N. W., to Room 706, Mills Bldg., Washington, D. C.

AUTOMOTIVE INDUSTRY SEES PROSPEROUS YEAR

The automotive industry has already experienced some increase in business as a result of the country's favorable reaction to the national election, but the full force of the improvement will not be felt until after the first of the year, in the opinion of directors of the Motor & Accessory Manufacturers Association who met in New York City recently at a meeting of the Executive Committee.

There was favorable comment on the fact that although the stock market had shown feverish activity since the election, general business had so far given indication of only moderate expansion, suggesting that business men still had in mind the lessons of the past few years, with their warning against boom tactics.

Expect Brisk Demand in Spring

This time of year is naturally the ebb tide in automobile sales, with winter weather and the shows in the offing. Therefore it could not be expected that the industry would feel immediately any extensive effects of the improved business sentiment since the election. It was the general opinion of the meeting that, with general prosperity on the gain, a brisk demand for motor vehicles could be expected in the spring. This means an enlarging parts and accessory business from now until that time to take care of increased production schedules in the motor car factories during the first few months of the new year.

Production Will be Held to Demand

Comment was made on public statements to the effect that the industry was preparing for a five million car year in 1925. It was felt that the public should not be allowed to expect any such expansion but should be informed that production would be held to actual demand.

In an informal discussion of conditions in the industry satisfaction was expressed over the bright outlook in the tire division, predicated on the fact that this branch of the industry was on a basis which had never been sounder in its history. It was the general feeling that the automotive industry generally would continue the stabilizing process already begun, which would include the enlargement of some of the better organized companies and the elimination of some of the smaller units.

Like the general condition of manufacturing and merchandise stocks throughout the country, it was pointed out that materials and parts stocks of motor vehicle manufacturers were low, and considerable expansion of parts buying was not only justified but immediately necessary.

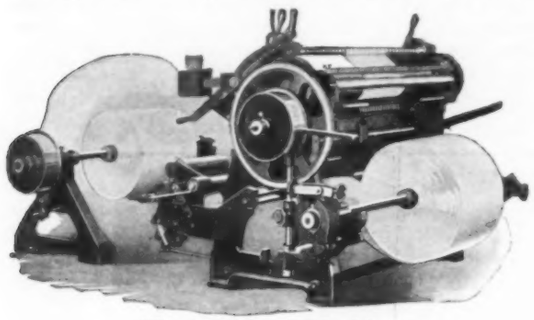
The sentiment regarding future activities favored conservative planning, but ultra-conservatism was held unjustified in view of the condition throughout the country generally of stocks, employment and wholesale and retail demand. It was the general opinion that co-operation among related industries, and particularly in the automotive field, would assure a larger and more satisfactory year in 1925 than during the past twelve months.

FACTORY EQUIPMENT

Cameron Machine Co. Perfects New Machine for Slitting and Winding Friction Tape

The Cameron Machine Co., Brooklyn, N. Y., has announced a machine for handling the process of slitting and winding rolls of friction tape, which not only is said to produce a better product but reduces labor costs and saves floor space.

In using friction tape the fraying of the edges has always been a source of annoyance and difficulty. The term friction tape is usually applied to the tacky-surfaced fabric used by electricians and by numerous other mechanics for a variety of uses. It might also be applied to surgeons' adhesive tape, etc. but usually refers to the first mentioned variety.



The Cameron Machine

Rolls of friction tape usually measure approximately 4" in diameter and ¾" wide. There has hertofore been but one uniform process for cutting the rolls. The fabric is wound full width into a roll of the desired diameter, with a paper core, and then mounted on an improvised lathe. This roll is sliced into sections of the thickness required by the operation of pressing a knife through the material and the core as it revolves on the lathe.

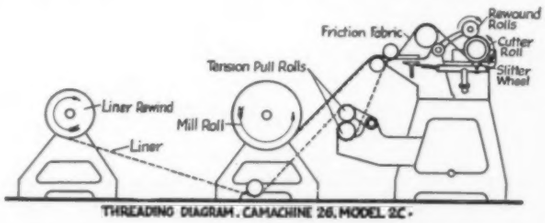
The consequence of cutting the rolls in this way, no matter how skillful the operator, is that the edges of the rolls are sealed and bound together, ply by ply, because the knife in cutting through will press the edges of one ply into close contact with the next and smear the plastic compound over the edge of the roll. Therefore, when unwinding such a roll, the tape ravels.

The Cameron Machine Co., which has specialized for over 20 years in the building of various kinds of slitting and roll-winding machines, has devised a machine on which the parent roll of friction tape is mounted at the rear. Devices are provided in some cases for removing a liner or separator cloth where it is used, and also some driven rollers for stripping the friction tape off the parent roll. The tape is then slit by the Cameron method of slitting, whereby the fabric passes along over the surface of a flint-hard steel roll, with cutter wheels having a semi-sharp, V-shaped edge pressing through the material as it passes over the roll and dividing it into the widths of tape required. These strips, while still in contact with the surface of this flint-hard roll, are passed along to a rewinding shaft or mandrel on which paper cores of the appropriate width for the size rolls being made, are already mounted. It is then a very simple matter to wind these strips into rolls of the desired diameter. In fact, this winding-up process goes just as fast as in the old style methods where the uncut fabric was wound on to a paper core prior to being cut on the lathe.

Practical Shaft Devised

As to the paper cores on which the rolls are wound up, a very practical and simple core shaft has been devised whereby the entire original length of the paper core is placed on the shaft; and the shaft, core and all, is dropped into a core cutting machine. This machine cuts the whole length of tube into narrower widths required and leaves them in place right on the core shaft so that when it is placed in the slitting and roll-winding machine, the whole job is done at the one operation.

The fact is emphasized that these rolls will unwind with absolute smoothness and freedom from raveling, which is a sufficiently valuable point in itself to need no further comment on labor-saving or any other factor.



THREADING DIAGRAM. CAMACHINE 26, MODEL 2C.

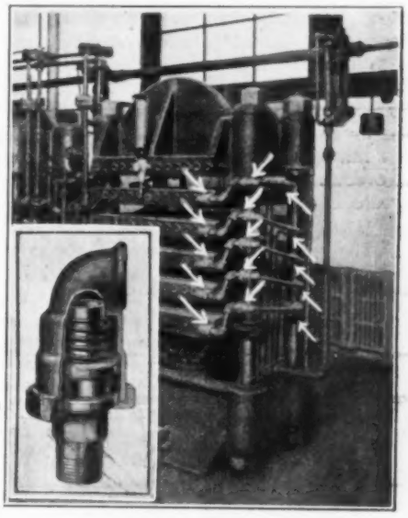
Manufacturers who rely on holding their business and increasing it from year to year by a quality product, have welcomed this machine; and although it arrived in the field of practical machinery only a few months ago, it has already been installed in four of the leading plants with results on which the makers will be very glad to comment and give data for a check-up and thorough investigation.

The Cameron Machine Co., also wishes to announce that they are perfectly willing to build machines of this kind and submit them to the prospective user without obligating him in any way as to the final acceptance of the machine. In other words, they are willing to submit the machines subject to free trial in the plant where they are to be used. This is probably the most convincing evidence that the claims which the Cameron people make for their machines are justified.

The illustrations give a general idea of the machine.

LOOMIS SWING JOINTS ARE MADE OF BRONZE

The Loomis Swing Joint, manufactured by the Currier-Loomis Co., 39 Cortlandt St., New York City, is a standard all-bronze flexible joint for conducting steam, water, oil or gas, that makes possible a permanent installation of flexible piping. The leak-proof qualities of the joint are not affected by rapid temperature changes and this fact makes it a very serviceable and satisfactory connection for heating and chilling presses.



Loomis Swing Joints on a 5-Platen Press

A feature of the construction of these joints is the complete protection of the packing from wear. The packing remains stationary in the joint, protected at top and bottom by ring washers or glands. The turning of the spindle exerts its wearing effect on these rings and not on the packing,with the exception of the inner cylindrical surface of the packing. Only such pressure as is necessary to hold a tight joint is exerted upon the packing; no destructive pressures can be applied to the packing by tightening the gland. When repacking is necessary it can be accomplished in a few minutes without disturbing connecting piping.

No special tools are required to take the joints apart. The joints swing in all directions and the most complicated motions can be easily obtained.

GOODYEAR GETS PERMITS FOR NEW MACHINE SHOP

Building permits taken out this week for the completion of a new engineering building for the Goodyear Tire & Rubber Co., Akron, Ohio, offer significant indication of increased production activity in the rubber city. The new building will be five stories high and 120 feet wide by 400 feet long. It will house the complete engineering shops of the Goodyear company.

Goodyear officials stated that this was the first step toward relocating departments of the factory to secure greater operating efficiency and to increase the production output of the plant.

Expect Increased Business

In a statement to Goodyear dealers this week G. M. Stadelman, president of the company, verified reports that the company was planning definitely for a substantial increase in business in 1925. "With the many improvements in construction processes, automobile tires today are giving a much longer mileage than was the case formerly," said Mr. Stadelman. "Indeed it is no exaggeration to say that the great volume of replacement tires for new automobiles does not come until the second year after the public's purchase of new cars. The year 1923 saw the biggest increase in car registration in the nation's history. Consequently there is every reason to expect a substantial increase in tire buying during 1925.

Sees Widespread Use of Balloons

"The most important single phase of 1925 tire merchandising, in my opinion, will be the balloon tire. The balloon tire has convinced the most skeptical of its worth. It has been out under the most strenuous tests of actual use long enough to demonstrate its superior advantages over the old high pressure tire, and the swing over from high pressure tires to ballon tires which began during the present year will become much more marked during 1925.

"No industry of course stands by itself, and no one line of business can prosper unless other lines are also active. However, business conditions in America continue to grow more favorable. The promise of improvement so definitely indicated a year ago has been fulfilled. That promise is still brighter today than it was in December 1923.

General Conditions Better

"General conditions are better at home and abroad. The presidential election with whatever uncertainties accompanied it, is past. America is at peace with the world. International conditions grow more stable. The farmer is getting better prices for his product. Money is easy.

"During the past year Akron industries had a total output of $403,527,240 which was a gain of 30 million dollars over the preceding fiscal year and indicates that the city is on a sound industrial basis. This splendid increase in 1924 should be at least duplicated in 1925 with every indication of a marked advance over that figure."

To Operate Marathon Plant

The Flex-Hyde Rubber Co., recently organized to purchase the factory of the defunct Marathon Tire & Rubber Co., Cuyahoga Falls, Ohio, paid $100,000 for the plant, according to George B. Wells, secretary of the new company. The Flex-Hyde company plans to manufacture all the rubber goods, with the sole exception of tires, formerly sold by the Marathon company but under its own trade name, "Flex-Hyde." The tire department will be discontinued. Operations are expected to start within a few weeks.

The Marathon company went into receivership last January with liabilities of $400,000. The Goodyear Tire & Rubber Co., Akron, Ohio, recently purchased the name, good will and patents of the Marathon company for $25,000.

New Goodyear Engineering Building

PREDICTS BIG RUBBER CONSUMPTION IN 1925

(Special to THE RUBBER AGE*)*

In his speech to the shareholders of the Gordon (Malaya) Rubber Estates in London recently, Sir Francis Voules, the chairman, made some interesting comments upon the outlook for the rubber industry. Sir Francis estimated that the world consumption during 1925 may amount to 520,000 tons, which is 70,000 tons more than expected by H. Eric Miller, president of the Rubber Growers' Association, and 50,000 more than the forecast of Symington & Sinclair, the well-known brokerage concern. He has arrived at this figure after a careful study of the American demand and points out that in the comparatively quiet month of October, America used 33,000 tons. If this rate of consumption is to continue throughout 1925, it will mean just under 400,000 tons for America alone, and a conservative estimate for Europe and the rest of the world is 120,000 tons. Europe, however, may spring a surprise, and it is noteworthy that, despite the recent falling off in American demand, the London market has been very active in attending to the increased demands of France, Scandinavia, and Germany.

"Restriction Not Elastic Enough"

"It appears," said Sir Francis, "that the restricted production must remain at 50 per cent until Feb. 1, and then, according to present regulations, can only be increased to 60 per cent. While the restriction policy has undoubtedly been beneficial to the industry as a whole during the bad times we have been through, it would almost appear that the policy adopted has not been elastic enough, and I would suggest that it would be advisable that the authorities should consider whether means could not be found comparatively early next year to make releases more quickly than arranged for under existing regulations. I do not myself believe it to be in the best interests of the plantation industry that a shortage in the supply should take place, entailing an abrupt upward movement in the price, which in the interests of all concerned is to be avoided if possible. However this may be, it does seem we are in sight of better days, after a long period of depression, and that all of us who are interested in this great industry have every justification to look forward hopefully to the future."

FISK RUBBER ACQUIRES RECLAMATION PROCESS

George J. Mead, Chicago, Ill., and Clement A. Rossbach, Milwaukee, Wis., inventors of a process of reclaiming rubber material, are the assignors of the method and the product obtained from it, patented in the U. S. Patent Office under No. 1,517,221, to the Fisk Rubber Co., Chicopee Falls, Mass. The method consists in shredding vulcanized, rubberized fibrous material, separating out the free rubber, devulcanizing the vulcanized, rubberized fibrous material, and adding unvulcanized rubber.

NEW SCHRADER DISPLAYS ATTRACTING ATTENTION

Two of the most striking and colorful displays noticed recently are attracting the attention of the thousands who pass the show windows of the plant of A. Schrader's Son, Inc., makers of Schrader Tire Valves and Tire Gauges, Brooklyn, N. Y.

In one window the universal use of Schrader Tire Valves throughout the world is depicted. The central display is a huge circular map of the world around the edges of which passenger cars and trucks move in a never ending stream. Across the map is thrown a cut-out of a Schrader Tire Valve enlarged many times actual size. Below are the words "Schrader—Makers of pneumatic Valves since 1844"—and the sentence, "Millions of people and millions of tons of merchandise are being transported every hour of the day over highways all over the world on air held in pneumatic tires by Schrader Tire Valves."

Around the bottom of the window and at the sides various Schrader products are artistically arranged. On each side is a Silent Salesman, the Schrader display cabinet now on the counters of many thousands of dealers throughout the country.

Tie-Up With National Advertising

In the other window is a store scene showing how a dealer can give his customers quick service on all Schrader Tire Valves, Valve Parts and Accessories and Tire Gauges if he has a Schrader Silent Salesman on his counter. The container, a large replica of the Schrader Tire Gauge, is given to auto accessory dealers as a container for their Schrader stocks and as a sales help. It is the dealer's tie-up with the national gauge advertising.

Various Schrader products are arranged attractively around the bottom and side of this window as in the first to complete another of the interesting and dramatic displays that the Schrader Company has been setting up recently to tell the story of its products to the thousands who pass this corner daily.

Between these two displays is a well-known make of balloon tire on which Schrader Tire Valves are standard equipment. Tires made by many different tire companies are displayed here from time to time to illustrate how generally Schrader Valves are used as standard tire equipment.

RUBBER SUGGESTED AS A CURE FOR RASH

The use of soft rubber cushions which fit over the hard ear pieces of radio headsets has been suggested by Dr. Marcus of Vienna as a cure for a new affliction which has broken out in Europe. The new disease is an eruption of the tender skin of the ears of radio devotees, resulting from the constant pressure of the hard rubber headpieces. It has been nicknamed "radio rash." The use of soft rubber is not only recommended as a cure but as a precautionary measure.

J. E. Breon Promoted

J. E. Breon has been named manager of the Minneapolis branch of the Century Rubber Co., Chicago, Ill. New showrooms and a service station have been opened in Minneapolis at 1106 Harmon Place. The Century branch had occupied the building at 1218 Harmon Place for more than two years.

Mr. Breon has been associated with the rubber industry for 14 years. At one time he was employed by the Firestone Tire & Rubber Co. as a salesman and division director and later by the B. F. Goodrich Co. as a traveling auditor. He became associated with the Century company four years ago in Minneapolis and more recently had been in charge of the St. Paul branch.

Gluing Device Patented

John H. Roberts, Milwaukee, Wis., inventor of a gluing device for tire-wrapping machines, has assigned U. S. Patent No. 1,518,121 on the invention to the Fisk Rubber Co., Chicopee Falls, Mass. The glue applying device is carried by a rotating shuttle on the tire-wrapping machine. It is positively actuated by the withdrawal of paper from the shuttle.

MILLER PRODUCING 1,000 RUBBER REDUCERS A DAY

The Miller Rubber Co., Akron, Ohio, is producing approximately 1,000 rubber reducing garments of various types per day. A special department has been organized to take care of this business, which has been increasing rapidly within the past few months. The rubberized silk corset is becoming more popular with women, according to Miller officials, who say that comparatively few corsets are being sold at the present time which do not embody a reducing feature.

Joins Houk Rubber

Harry L. Arbogast has severed his connections as chief chemist of the American Rubber & Tire Co., Akron, Ohio, to become a director and factory manager of the Houk Rubber Co., which took over the plant and property of the bankrupt Tuscora Rubber Co., Dover, Ohio, several months ago.

To Open New Castle Plant

F. A. Seiberling, president of the Seiberling Rubber Co., Barberton, Ohio, recently announced that the company's plant at New Castle, Pa., which has been closed for a year, will be reopened early in 1925. The New Castle factory has a capacity of 3,500 tires a day. New equipment being installed at the Barberton factory will increase its capacity nearly 50 per cent, he said.

Firestone Gets Tax Refund

The internal revenue commissioner approved among others the claim of the Firestone Tire & Rubber Co., Akron, Ohio, for a tax refund of 25 per cent on the taxes paid on its 1923 income. The Firestone company is entitled to a refund of $333,568.

Phoenix Rubber Indicted

A federal grand jury recently returned an indictment against the Phoenix Rubber Manufacturing Co., Boston, Mass., on the charge of concealing assets of $6,000 in bankruptcy. Isadore Berman, president of the company; William Barrish, treasurer; and Hyman Barrish, a director, were charged with aiding.

These Displays in the Show Windows of the Schrader Factory Tell Three Stories

N. Y. RUBBER BROKERS DINE AT THE BILTMORE

(Continued from Page 172)

Mark Twain for wit and the superior of any address ever made by Chauncey Depew. Dr. Giles, in his own inimitable style, touched on the remarks made by the previous speaker and kept the diners in a continual uproar with his comments and stories. His evident affection for F. R. Henderson, who sat on his right, and the frequent references to Mr. Wilson and Senator Ashurst pleased the audience greatly and helped Dr. Giles in putting over his excellent address. He wound up with a serious discourse on the place of the Constitution of the United States in our every-day affairs and brought home to everyone present the wonderful benefits accruing under our Constitution.

Fred B. Peterson
Member of Dinner Committee

The last speaker, Senator Ashurst, gave a very interesting talk, touching on various government problems and giving some very interesting information in regard to his native state of Arizona. That his address was of great interest and appreciated by his hearers was evident by the demonstration given the Senator when he had finished.

Officers of the Association, who were elected at a meeting in November, are H. A. Astlett, of H. A. Astlett & Co., president; F. Pusinelli, of Poel & Kelly, Inc., vice president; R. L. Chipman, treasurer; and J. P. Sullivan, secretary-manager.

Fisk Earns $2,736,664

The Fisk Rubber Co., Chicopee Falls, Mass., reports gross sales of $52,946,531 for the year ending Oct. 31. After expenses and depreciation reserves, but before interest and tax reserves, it reported an operating profit of $4,259,544. After interest charges and Federal tax reserves the net profit is $2,736,664.

The general balance sheet shows net current assets of $24,031,379, of which $2,246,055 is in cash, $333,097 in notes receivable, $8,868,953 in accounts receivable, less reserve, and $12,563,273 in inventories. Current liabilities are put at $2,178,866, including $1,665,880 in accounts payable, $112,986 for accrued interest and $400,000 for tax reserves. The profit and loss surplus at the year's end was $8,348,770.

E. L. Schmock Joins American

Floyd E. Snyder, president and general manager of the American Rubber & Tire Co., Akron, announces the appointment of E. L. Schmock as general sales manager. For the last four years Mr. Schmock has served the Miller Rubber company as western sales manager and prior to his connection with the Miller he was for several years a sales executive of the Firestone Tire & Rubber company.

Zev-Union Organized

The Zev-Union Tire Corp., New York City, was recently granted a charter at Albany to manufacture tires and other rubber products. Authorized capital is $10,000. Incorporators are C. F. Kingsley, 55 Hanson Pl., Brooklyn, N. Y.; Cecile Nolan, 940 68th St., Brooklyn, N. Y.; and Almora Meiklejohn, 400 W. 153 St., New York City, are the directors and subscribers. Taylor, Knowles & Hack, 165 Broadway, are attorneys for the new company.

Hood Acquires Shoe Patent

Warren E. Glancy, Waltham, Mass., who was recently granted patent No. 1,518,062 by the U. S. Patent Office on a rubber shoe and the method of making it, has assigned the patent to the Hood Rubber Co., Watertown, Mass. The process consists in coating a last with latex, applying shoe forming parts of rubber to this last and vulcanizing the article to unite the shoe parts to each other and to the latex coating. The united parts are then stripped from the last.

Personals

James Firestone Barnet, who for the past 12 years has been associated with the Firestone Tire & Rubber Co., and who was managing director of the Firestone subsidiary interests in the Far East, has been elected vice-president and treasurer of the Mirroscope Co. of America, Inc., a new corporation which will manufacture rear vision mirrors for automobiles.

* * * *

H. T. Kraft, chief engineer of the aeronautical department of the Goodyear Tire & Rubber Co., who spent some time in Friedrichshafen, Germany, studying the construction of Zeppelins, recently gave an interesting talk before the Kiwanis Club, Medina, Ohio. He prophesied that lighter than air aircraft would be used commercially in a few years.

USE VULCANIZED LATEX IN BRITISH PRODUCTS

Vultex Products, Ltd., Aldwych, London, W. C. 2, London, England, recently announced that a line of rubber products trade-marked "Vulpro", which includes rubber-proofed sacks, children's waders, aprons, sponge bags, waterproof sheetings, air pillows and air cushions, etc., are being prepared with vulcanized latex in accordance with British Patents Nos. 193,451 and 208,235.

"Presto" Registered

Jacob Stein, doing business as the Climax Rubber Co., New York City, recently registered in the U. S. Patent Office under No. 203,057 the trade-mark "Presto." The trade-mark has been used since January, 1924, on rubber reducing garments, including rubber corsets, girdles and brassieres, rubber ankle reducers and rubber diaphragm reducers.

"Rubbertex" Registered

Poierette Corsets, Inc., New York, N. Y., recently registered in the U. S. Patent Office under No. 198,378 the trade-mark "Rubbertex Reducers" which will be used on corsets, girdles, brassieres and combinations of corsets and brassieres. The company claims use of this trade-mark since April 30, 1924.

Consider Goodyear Plan

Directors of the Goodyear Tire & Rubber Co., Akron, Ohio, did not reach a final agreement at a recent meeting when they considered the plan for readjustment of the company's stock. The plan under reconsideration involves the refunding of the $50,000,000 outstanding 8 per cent notes and 8 per cent bonds and proposes to pay the 28 per cent dividends accumulated on the preferred. It is understood that the directors plan to place the preferred stock on a regular dividend paying basis as soon as the refunding is completed.

THE PROSPECTS FOR 1925 PROSPERITY

THE RUBBER AGE has made a survey among leaders of the industry to discern what volume of business, what new developments we may expect in 1925. Many prominent executives have responded to our request for forecasts with statements that will be read by every subscriber with more than usual interest.

Not the least of 1925 developments will be improvements in methods of merchandising and the continuance of economy plans in the larger factories. General business is still on the up grade; it has not reached its peak. The rubber industry is certain to move along as it has done during the last six months, when many companies succeeded in paying off bank debts and resuming dividends.

BRITISH TESTS SHOW MERITS AND FAULTS OF MOTORCYCLE BALLOONS

Use of Low Pressure Tires in England is not as Widespread on Motorcycles as on Cars—No Great Disadvantages Shown as Result of Tests Made by Newspaper

(Special to THE RUBBER AGE)

At the recent Motorcycle Show in London the English public were for the first time introduced to the balloon tire on a number of the heavier family combination motorcycles. Since then the merits and faults of low pressure tires has been an almost universal topic of conversation among motorcyclists in Great Britain. They have, however, not yet taken to this new comfort device with the same enthusiasm as light automobile owners. The fitting of large, soft tires to a motorcycle presented certain difficulties which the makers, happily, have now overcome. Although it is admitted that the time is not yet ripe for the fitting of the tires indiscriminately to all motorcycles, expert opinion is unanimously in favor of them for large combination outfits.

About a year ago a London newspaper carried out the first tests in England with low-pressure tires fitted to a motorcycle. Numerous letters were received from critics stating that such tires would be extremely dangerous, that they would affect steering, reduce speed, and the fact that they were pumped to such a low pressure would result in their coming loose easily.

Tests Made With Latest Models

Just recently, after balloon tires have unquestionably proved their worth for automobiles, the same newspaper has again submitted them to tests on motorcycles. The trials, which were carried out with a number of the latest models from the London Motorcycle Show, only strengthened the opinion gained from the previous tests when the motorcycle balloon tire was in its experimental stages, namely, that in certain circumstances it constitutes the greatest comfort device ever introduced for the benefit of the motorcyclist and his passenger.

As already mentioned, there are reservations. At the present stage they are not considered practicable on the smaller machines. For the baby motorcycle they are much too unwieldy. In fact, some experts go so far as not to recommend them for any machine below 600 c.c.

For the large side-car machine they are ideal. In the tests above referred to three different side-car combinations of the latest models in the 600 c.c. class and over were tested for a fortnight, and in each case the tires gave greater riding comfort—an opinion shared both by the drivers and their passengers. They improved the suspension by about 50 per cent. In each case the tires were of the wired on type, and it would be next to impossible for them to come off. The sidecar outfits were never let fully out on the road, and therefore no data was obtained as to the effect the tires have on the maximum speed. A speed of approximately 50 miles per hour, however, was reached on every machine tested.

It was found that steering was slightly affected at very slow speeds. At about four miles per hour there was a distinct drag on the steering, and in each case, when taking a left turn, the machines were very heavy to pull round.

Advantages and Disadvantages

From these tests the advantages and disadvantages of low-pressure tires may be summed up as follows with the proviso that the former far outweigh the latter:—

Advantages.—Immeasurably increased riding comfort both for rider and passenger. Smooth riding over the worst pot holes. Better road holding qualities. The non-skid tread is larger and as the tires are inflated to a low pressure more of this tread comes into direct contact with the road.

Disadvantages—The tires result in a slight loss on the maximum speed. Most heavy combination machines, however, are far speedier than the requirements of the average driver justify. Steering is affected at very low speeds. But when the machine has gained its momentum the effect on the steering is only slight. The tires throw up more mud, dust, and dirt than the ordinary tires, but this can be counteracted by fitting larger mudguards.

From the interest exhibited at the recent Motorcycle Show it seems certain that during the coming season motorcyclists will take advantage of this new comfort device and that road experiences will quickly do away with any prejudices that still surround the balloon tire from the motorcyclist's point of view.

India Tire Prospers

1924 has been the most prosperous year in the history of the India Tire & Rubber Co., Megadore, Ohio, according to the president, J. M. Alderfer, who states that sales have increased 53 per cent over 1923. An extra dividend of $1.00 per share on common stock has been declared, payable Jan. 1, 1925 to stockholders of record Dec. 20. This dividend is in addition to the regular quarterly dividends of $1.00 a share on common and $1.75 a share on preferred stock.

Hutten Tire Formed

The Hutten Tire & Rubber Corp., New York City, has been incorporated with an authorized capital of $100,000. The company will manufacture tires. Incorporators are H. M. Burr, 59 Nagle Ave., New York; Gussie Blank, 380 Bushwick Ave., New York; and Edward McKinney, 519 79th St., Brooklyn, N. Y.

Christmas Window Display of the U. S. Rubber Co. at 1790 Broadway, New York

British Exports of Rubber Coods Growing

A Comparison of American and British Shipments Show that Tire Exports from Great Britain are Growing More Rapidly

By E. G. Holt

Assistant Chief, Rubber Division,
U. S. Department of Commerce

EXPORTS of rubber manufactures from Great Britain in 1923, including rubber-proofed outer garments, belting other than leather, woven hair and cotton, and engine and boiler packing other than asbestos; in addition to tires, boots and shoes, hose, heels and soles, and miscellaneous rubber goods, were valued at £6,735,352 according to recent official statistics. The following table compares the values of annual exports since 1920 from Great Britain and the United States, and the exactly similar trend of the trade is evident. The United States trade fell off more sharply in 1921 as compared to 1920 than the British, but the American recovery has been slightly more rapid, and the value of the exports of each country in 1923 bore about the same ratio to the value of the trade in 1920.

British and American Rubber Exports

	Great Britain	% of 1920	United States	% of 1920
1920	£15,342,281	100.0	$85,436,897	100.0
1921	5,941,932	38.7	30,787,300	36.0
1922	6,319,292	41.2	34,008,231	39.8
1923	6,735,352	43.9	36,972,563	43.3

Shipments to the Irish Free State during the last nine months of 1923 are included in the above export statistics, whereas for preceding years the Irish Free State was treated as a part of the domestic market. An adjustment of the 1923 statistics by subtracting the value of exports to the Free State, would reduce the British total for 1923 to £6,440,963, about 42 per cent of the 1920 value.

The trade with British Possessions amounted to 28 per cent of the total value in 1920, 36.6 per cent in 1921, 39.9 per cent in 1922, and in 1923, including shipments to the Irish Free State, to 42.7 per cent.

Tire Exports Growing Rapidly

British tire exports showed a uniformly large increase in 1923. Automobile casings to the number of 397,170 were exported in 1923 as compared to 270,721 in 1922, 162,609 in 1921, and 487,499 in 1920. The number of motor cycle casings exported in 1923 was 104,941; in 1922, 72,481; of cycle casings in 1923, 1,336,577; in 1922, 809,216. The value of automobile casings exported increased only from £1,079,799 in 1922 to £1,092,530 in 1923, showing very greatly reduced prices in spite of the change-over from fabric to cord tires during this period in England.

American exports of automobile casings numbered 1,325,753 in 1922, and 1,362,741 in 1923. Great Britain ranks about equally with Canada in the international export trade in motor tires, France being the leader, the United States second and Canada and England in close competition for third place.

British solid tire exports increased from 54,812 in 1922 to 59,278 in 1923, a much lower percentage increase than for other classes of tires. The American exports of solid tires numbered 55,665 in 1922 and 96,849 in 1923.

Strong in Mechanical Goods Trade

Statistics of British trade in mechanical rubber goods are not definite except for hose; belting of rubber is included in a class covering all sorts of belting other than leather, woven hair and cotton; and packing in a class covering all sorts other than asbestos. The exports of hose in 1923 amounted to 480 tons valued at £147,524 as compared to 477 tons valued at £142,215 in 1922. Belting exports are as described above increased from 2,372,496 pounds in 1922 to 2,650,256 pounds in 1923; exports of packing from 1,777,216 pounds to 2,467,422 pounds.

Exports of rubber hose from America in 1922 amounted to 3,381,210 pounds and in 1923 to 4,455,502 pounds; rubber belting exports increased from 2,590,057 pounds to 3,548,468 pounds; and rubber packing from 1,149,446 pounds to 1,564,492 pounds. Although American exports of hose and belting increased much more in 1923 than the British trade, British packing continued to hold a dominating position in international markets. Britain ranks third, following the United States and Germany in the volume of annual exports of rubber hose, and second in rubber belting exports, the United States leading.

British exports of rubber hose went chiefly to British India which took 124 tons, South Africa 46 tons, Persia 44, Argentina 31, Australia 26, and Chile 20 tons. Exports to European markets fell off generally except to Spain and Sweden, and there was a slight decline in the trade with Argentina, Chile, and Brazil. Some of the largest increases in trade were with Persia, shipments increasing from 5 tons in 1922 to 44 tons in 1923, probably as a result of oil well drilling, and with the Straits Settlements which took only 1 ton in 1922 as compared to 18 tons in 1923.

There was a marked decline in the belting exports to France which dropped from 2,959 cwts. in 1922 to 1,331 in 1923. Italy, Roumania, Germany, Finland and the Netherlands also took smaller amounts of this British product. Shipments to the Scandinavian countries and the Iberian peninsula increased, likewise to China and Japan in the Far East and Mexico, Chile and Argentina in Latin America. Peru and Brazil took less belting in 1923 than in 1922. The increased trade in 1923 as a whole, was due to purchases of the British Possessions which increased from 7,050 cwts. in 1922 to 9,736 in 1923.

The exports of rubber boots and shoes from Great Britain which amounted to 167,300 dozen pairs in 1920, and 149,325 dozen pairs in 1922, increased to 223,376 dozen pairs in 1923. The United States exported 340,259 dozen pairs of rubber boots and shoes in 1922 and 439,139 dozen pairs in 1923. The percentage gain for Great Britain in 1923 was greater than for the United States.

The principal increases in the British footwear trade were in shipments to Norway which grew from 9,900 dozen pairs in 1922 to 26,358 in 1923, the Netherlands from 9,522 to 16,555 dozen pairs, France from 17,585 to 26,707 dozen pairs, Australia from 19,334 to 37,547 dozen pairs, and New Zealand 9,818 to 19,505 dozen pairs. British footwear exports to Belgium fell off sharply in the face of French competition, and trade with the Straits Settlements was affected by the local production of cheap rubber soled footwear in that market by a Chinese firm. Elsewhere the trade was generally steady.

Soles and Heels Decline

In rubber heels and soles American exports increased from 774 tons (1,734,396 pounds) in 1922 to 850 tons (1,903,502 pounds) in 1923, while British exports declined from 947 tons in 1922 to 675 tons in 1923. This is largely explainable by the fact that American exports of heels and soles go largely to Mexico, the Philippines, Cuba, and Latin America generally, while British trade has been chiefly with European markets where increased competition from local manufacturers coupled with the difficulty of doing business with depreciated currency countries has been sharply felt. Practically all the decline in the British exports of this class was the result of conditions in countries outside the British Empire, the exports to foreign countries falling from 843 tons in 1922 to 580 tons in 1923. British exports of rubber heels and soles have declined steadily since 1920 when 2,303 tons were shipped abroad.

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No Sales Needed to Boost Business

Quality of Goods and Excellent Service have Built Up an Enviable Reputation for the Atlas Rubber & Belting Co.

By **Don Carlton**

DESPITE the fact that the Atlas Rubber & Belting Co., conducting a rubber store at 115 South Ludlow St., Dayton, Ohio, and another in Cincinnati, does not hold periodical sales, as do the majority of retail stores, it does a large volume of business. No business stunts are needed to hold trade or secure new customers for the Atlas store. They have been built up by a policy of selling quality merchandise at a price which yields a satisfactory profit. The sales persons have been trained to render quick, courteous and intelligent service. No other formula for the success of this company can be given.

Also Does a Wholesale Business

The business of the Atlas Rubber & Belting Co. is divided into two broad classes, namely, wholesale, including factory mechanical rubber goods, and retail. The wholesale end consists of jobbing rubber drug sundries, rubber surface c'othing, rubber specialties, rubber hose and kindred lines. All lines of factory mechanical goods are carried such as belting, hose, packing, molded goods, boots, rubber and slicker clothing and similar items in demand by manufacturers and public utility companies either for the use of employees or as raw material necessary for the manufacture of some other product.

Dayton and Cincinnati mothers ar familiar with the Atlas company. Thei steps point toward one of the stores whe they are in need of crib sheeting, rubbe diaper pants, diaper bags, pacifiers rattlers, bib aprons or sponges. The know that absolutely fresh stock—so important to the purchaser of rubber good —may be obtained there because the rapid turnover the store enjoys is an assurance that the item they need has not reposed for a long time on the shelves. This is particularly true of baby things of pur rubber sheeting which have to be kept in the dark in the original container. And experienced women clerks are on hand to give the mother the benefit of their knowledge when it is required.

Sells All Rubber Products

In its retail business the Atlas company caters to the general public on all items of rubber which are possible to market and for which there is any demand. Seasonable goods are displayed in the windows and advertised, a wise merchandising policy for it enables the Atlas company to take advantage of all kinds of weather. For example, in the hot weather, rubber bathing caps, bathing shoes, bathing suit bags, rubber ear plugs and other bathing accessories are featured. When fall arrives with its opportunities for hunting, basket ball and football, light-weight boots for hunters, canvas rubber-soled shoes, basket balls and footballs are advertised. Winter, of course, brings a demand for artics and galoshes, fancy boots for street wear and kindred articles. In the spring, garden hose and lawn sprinkling accessories are advertised and featured in the show windows. Spring house cleaning is the occasion for impressing upon the mind of the busy housewife the advantages of rubber stair treads, corrugated matting for porches, round mats for use under flower pots, etc.

Staple articles such as elastic hosiery and rubber tubing find a ready sale the whole year around. A large and ready market has been found by the Atlas company for rubber articles for use in hospitals, nurseries and sick-rooms.

Retail business is secured principally through newspaper advertising, direct by mail advertising and through circulars given out in the stores. The attractive window displays compel the attention and arouse the curiosity of passersby. And the attempt of the Atlas company to sell everything that is made of rubber is appreciated by the person who visits the store on the forlorn hope of securing a little-known article and is able to purchase the very article he desired. In its advertising the Atlas company hammers home to the public the idea that if an article of rubber is wanted, it can be bought at its stores.

The clientele of the stores consists of all classes. Only high-grade articles are sold, and where quality is the predominating feature, sales can seldom be effected. But the people with whom they do business seem well satisfied with the merchandise and are willing to pay for it. They continually return to make other purchases.

Well-Trained Sales Persons

The sales persons are instructed to be of as great assistance to the customer or prospective customer as possible. No patron ever stands neglected in the store while clerks are busy waiting on other customers. A courteous word to point out that his or her wants will be supplied in a moment has the desired effect. Each patron, whether he is interested in a ten-cent rubber ball or in the largest tire handled, is given the same courteous

(*Continued on Page* 191)

A Typical Window Display of the Atlas Rubber & Belting Co.

Stretching the Tying-Mark to Cover a Full Line of Rubber Products

A Good Tying-Mark Introduced by Judicious Advertising is an Excellent Means of Promoting Good-Will for a Product

(Written Especially for THE RUBBER AGE)

By Waldon Fawcett

ANY one who made the claim that the idea of the "tying-mark" originated in the rubber field would probably incur a challenge from some other industrial quarter, though just what one I cannot guess. What may be asserted with full confidence, however, is that no other trade sector has witnessed so extensive and so consistent a development of a principle of merchandise branding that is but just coming into its own. Certainly no other commodity line is so admirably adapted as rubber goods to exercise of the new strategy for consolidation of good will.

It is quite possible that some persons within the trade as well as many members of the general public have not recognized the tying-mark for what it is. For, to the casual beholder, a tying-mark may appear, at least at first glance, as nothing more than a strongly-backed trade-mark. After all it is essentially a trade-mark. But it is much more than a varietal name or a specialty brand. Rather is it a super-mark, the symbol of an alliance of brands, spreading its wings over several, or, mayhap, a whole flock of everyday trade-marks.

Tying-Mark Useful in Rubber Trade

The tying-mark has just grown into the very useful function it now serves in the rubber field. There is reason to believe that the first adopters of what are now characterized as tying-marks took on these "riders" for their wares solely from a sense of advertising opportunity and a longing to make commodity identification doubly sure. For a long time, the impression was almost universal among rubber tradesmen that yet prevails in some quarters, viz that not more than one trade-mark was allowable on a given article of commerce. When it became known that a maker or marketer of goods may employ, simultaneously, two or more trade-marks to distinguish a given article of manufacture, the canny capitalizers of good-will hastened to double up in their labeling. Two trade-marks, it was argued, were better than one as affording the public dual clues and making things more difficult for counterfeiters. It was just another manifestation of that same eagerness for goodwill insurance that prompts the cautious captain in the rubber industry to register his trade-mark, copyright his label and finally, take out patents on his original designs.

Closer acquaintance with the practice that employs underlying and superimposed trade-marks on rubber goods brought to the pioneers in the experiment the idea of the tying-mark. The rubber industry, it must be admitted, was ripe for the evolution. From time out of mind, many of the leaders in the industry have produced at their respective factories varied lines of rubber goods. This diversification of manufacture has, however, extended to new lengths this past decade or two. Full lines have become the rule rather than the exception in the industry.

Whether or not it was generally recognized there was genuine need for a vehicle that would associate in the mind of the public all the products of a given manufacturer or producer. The more so because, with the extension of manufacturing activities, we find many a rubber firm marketing today not only kindred articles but items which the average citizen might regard as "unrelated products." Given this decentralization in output, there awaited a task for the medium that could symbolize the union of items and the joint responsibility of the makers. The tying-mark has risen to that occasion. It is, at once, a house-mark or institutional-mark that symbolizes the reputation and prestige of a versatile manufacturer and a group-mark that links together the items of a line, far-flung or compact as the case may be, and communicates to the new item in the line the confidence that has been inspired by its elders under the common banner.

All the latitude that obtains in the selection of ordinary trade-marks obtains in the case of tying-marks but considerations of use are apt to dictate rather narrowly the type of insignia to be employed. First choice with most users of tying-marks in the rubber field is the mark that is eloquent of corporate identity,—say a name or initials. It sometimes happens that what started as an individual brand will attain such prominence that it is sound strategy to make it serve as a tying-mark. An illuminating example of this maneuver is seen in the latter-day association of "Uneeda" with the National Biscuit Company's entire line of cakes, crackers, etc. When "Uneeda" revealed itself as a logical tying-mark, it was too late to put it in the corporate name without making a radical change of title, but recourse was had to the scheme of featuring the tying-mark in a phrase supplementary to the corporate name and inseparably associated with it in advertising, on stationery, etc.

Mention of advertising, brings to mind the fact that the firms in the rubber field that have been most successful in the use of tying-marks have seldom left the tying-mark to make its way unassisted. An advertising introduction has usually been resorted to. This is the more logical because in so many cases

Tying-Mark an Adjunct to Advertising

The tying-mark is coming into widespread use in the rubber industry to identify a varied line of goods. It is used in addition to the trade-mark because manufacturers have found it of great use in symbolizing their reputation and prestige.

When introduced and kept before the public mind by advertising, it soon becomes an unexcelled builder of the good-will of the consumer and of material help in maintaining the reputation of manufacturers, gained by the quality and durability of their products. When goods are not identified by a tying-mark, much of the benefit that would accrue from persistent advertising is lost. Once the tying-mark becomes generally known, it often results in causing the consumer to accept an addition to an established line on faith.

a tying-mark is an afterthought. It comes along after the brands or the specialty-marks of the line are already familiar to the public. There is all the more need of an advertising finger to point out a tying-mark from the fact that it is often impracticable to give the tying-mark the dominant display on the goods. If the product-mark is used by the public as a buy-word, it must continue to appear most conspicuously on the package and, whatever the haste to get over the tying-mark, the latter must be made subordinate.

Although the tying-mark must be kept in its place and somewhat in the background in the "dress" of the goods, it is important that the mark that connects a full line of goods shall come to be known and recognized and trusted by the public as soon as possible. For, just in proportion as it has a wide acquaintance, will the tying-mark be successful in obtaining a hearing for a new product that is added to the line. Likewise dependent upon the penetration which a tying-mark has made into the public consciousness is the success of the family mark when it has to bridge the gap due to a change, revision, or modification of a trade name. Generally speaking it is seldom wise to change an established trade-mark but there is no question bnt what a rechristening is attended with a minimum of risk if there is a tying-mark to hold the attention of the public until it has become familiar with the remade nickname.

A Builder of Public Confidence

Overtopping all these other urges to the advertiser to cultivate recognition of his tying-mark is the work that awaits the accepted institutional mark as blanket guaranty. It is, for the marketer of rubber goods, an ideal condition when the man on the street and the woman in the home will take an unknown article on faith,—merely, that is to say, out of the confidence inspired by the sight of a super-mark that has proven a safe guide and a dependable bond in the case of other products of the same general class. But this millenium is attainable only when a tying-mark has had time to demonstrate that it symbolizes a definite standard of integrity.

Since the trend in the industry has served to direct the attention of rubber men in general to the tying-mark as a marketing aid, promoter and entrencher of goodwill, there has been a disposition in some quarters to regard the tying-mark as synonymous with the collective or community trade-mark. In reality the two species of business badges are quite distinct in character and function. This, understand, is no slap at the collective mark. It is a useful vehicle of indentification and serves its purpose. But a collective or cooperative mark cannot take the place of a tying-mark controlled by an integrated interest.

In its usual guise, a collective or community mark is an emblem used jointly by all the members of a trade association or all the manufacturers in a given line in a given trade center. Thus, if all the rubber concerns in Akron were to arrange to imprint their products with a "Made in Akron" label it would be a collective or community mark. Such marks cannot be registered at Washington unless the goods be marketed through a central agency which actually has title to the wares. In contrast to this, the tying-mark is the property of one organization and its subsidiaries. It is therefore more intimate in its significance and it acknowledges a responsibility on the part of the marker that is not present in the same degree under a collective mark, even if the associated firms maintain a system of inspection.

Ideal Mark Elastic

The ideal tying-mark is as elastic as rubber itself. That is to say, it is of such a character that there is no question but what it can, without undue strain of any kind, be stretched to encompass any product that the parent house may include in its line. Right here is where some converts to the principle of a tying-mark have been overtaken by disaster. They have been sold on the idea of an emblematic key-ring, linking together all the members of the commodity clan. But they have been tempted by the idea of a tying-mark that would be hooked up, in each application, with an individual product-mark or specialty-brand. There is no denying that this scheme of composite trade-marks or hyphenated marks in which a family mark is merged with a given name, is very effective, so long as all goes well. It is a method of associating the tying-mark with the brand that should be resorted to whenever opportunity offers. The point is, however, that it is a mistake to pick a tying-mark that cannot stand alone but must always be used in conjunction with a product-mark. For, sooner or later, in line expansion, a product will be added that will not lend itself to this sort of team play. Indeed, physical conditions of packaging may dictate the separation of tying-mark and product-mark and necessitate affixing the brand on one part of the article or the container and giving the tying-mark a different location.

During the world war some of the firms in the rubber industry had a demonstration of the value of a tying-mark as a means of conserving goodwill. The exigencies of the occasion, difficulties in obtaining raw material, supercedence of government contracts, and other upsetting influences, made it necessary for these firms to discontinue, temporarily, certain items in their lines. The absence of a brand from the market was found, however, to involve a minimum loss of prestige so long as the tying-mark carried on with other items in the line. Furthermore, even in time of peace, a tying-mark kept in active service will afford the best of evidence for the U. S. courts and for the authorities at the U. S. Patent Office that there is no intention to abandon a subordinate product-mark even if its use is, from one cause or another, suspended for several years.

No Sales Needed

(*Continued from Page* 189)

treatment. An effort is made to sell each customer not only the article best suited to his individual requirements but the one that will give the best service.

The layout of the stores is very attractive. Many of the articles are displayed in cases and on tables in much the same manner as in the ten and twenty-five cent stores. This has been found an effective method of showing and selling merchandise. Stocks are kept in the basements of the stores and in the Atlas warehouse where maximum and minimum requirements of all articles are maintained. When the minimum is reached, on a certain item this article is reordered in the maximum quantity. In this way the Atlas company manages to keep an article on hand at all times and seldom runs entirely out of an article, as is often the case where a large number of miscellaneous articles are handled.

British Exports Growing

(*Continued from Page* 188)

There are some classes of rubber products exported from Great Britain in large volume in which the United States has comparatively little export trade. Waterproofed raincoatings, and sundry sheetings is one of these lines, but there are no official export statistics covering this class. Rubber proofed outer garments such as overcoats, mackintoshes and ponchos, is another line. The exports of this class in 1923 numbered 889,392 garments valued at £870,520, less than £1 per garment. The very good reputation of British proofed goods in export trade together with their reasonable prices makes this a difficult field for the American manufacturer, but in the rubberized piece goods trade there is a fair prospect of development on special fabrics for garment making, as well as in the hospital sheeting line.

A quite separate class of trade is that in golf and tennis balls, the value of the British exports of which amounted to £491,152 in 1923. American firms experience competition from British manufacturers of golf balls even in the United States, and in foreign countries the British share of the trade amounts almost to a monopoly, players throughout the non-American world being to a large extent of British nationality and the trade in sporting goods largely in the hands of British merchants. In the tennis ball trade some American manufacturers do a fair export trade, this sport being more international in character than almost any other. In the cycle tire trade American manufacturers have no important share, while Great Britain ranks as one of the leading producers, competing on equal terms with Germany and France.

Use THE MARKET PLACE For Results

VULCANIZATION & ACCELERATORS

By Andre Dubosc

PART II

Natural and Mineral Accelerators

The Important Role Played by Secondary Reactions in the Combination of Sulphur and Dimethyl Cyclo Octadiene—Vulcanization of a Rubber from which all Impurities Have Been Removed is Not Possible

AS we have shown in what has gone before, it is a very difficult matter to formulate the theory of vulcanization in an exact manner. The practical side of vulcanization, as we shall show in what follows, is no less difficult to carry out. The logical use of accelerators is responsible for getting around a large number of difficulties as we have indicated. It is unquestionable that their discovery and application mark the most important step in the progress of vulcanization since it was first invented by Goodyear and Hancock.

In explaining the different theories which have been propounded as defining vulcanization of rubber, it has been seen that certain substances, either of natural origin, as the resins that are contained in the rubber, or forming a part of the loading materials that are added to the rubber mixture, such as oxide of magnesia, lime, litharge, etc. have considerable effect on the progress of vulcanization.

It may therefore be concluded that the combination of sulphur and dimethyl cyclo octadiene is a far more complicated phenomenon that would appear at first glance. A number of secondary reactions must take place at the same time that the main reaction of vulcanization, the aforementioned combination, occurs. These secondary reactions escaped the attention of observers and experimenters for a long time, although their role now seems to be of the first magnitude.

But few of the chemists, who busied themselves with the chemistry and the technology of rubber suspected anything of this fact. But these ideas on the vulcanization of rubber in which accelerators play an important part are so contrary to the conceptions of the vulcanization process and its mechanism that were formerly thought to be correct, that had any such theory been advanced it would have received the attention of anyone interested in rubber. The fact that no such echo sounded through the industry indicates very handily that it was a long time before any rubber chemist or technologist suspected that accelerators play an important role in the mechanism of vulcanization.

Synthesis Accomplished in 1911

It was around the year 1911 that the synthesis of rubber was accomplished in a variety of ways in different countries, for example, England, Germany, France and the United States. It was found possible to prepare chemically pure dimethyl cyclo octadiene. In other words a rubber was obtained which did not contain resinous or protein matters, or in fact any impurities of any kind whatsover, the substances that are usually to be found in the natural rubber after it has been put through a thorough washing process.

If the theories explaining the mechanism of the vulcanization of rubber are correct, it follows that a chemically pure rubber, which is composed solely of dimethyl octadiene, should combine very readily with sulphur or the sulphur should be easily absorbed by it, without variation in the time nor in the temperature, and therefore result in the production of a rubber which is perfectly vulcanized.

Hence, it was with a great deal of surprise that it was found in Germany that the synthetic rubber, which was prepared either by the Hoffman, the Coutelle or the Harries process could not be vulcanized, that is did not possess the ability to fix sulphur under the ordinary conditions by which vulcanization is carried out. In other words this rubber did not vulcanize in the same manner as natural rubber.

Vulcanization of Synthetic Rubber

The synthetic rubbers that were prepared by the method of Strange and Mathews wherein condensation of isoprene was accomplished with the aid of metallic sodium did not however behave in the same manner. However it was found that this difference was due to the fact that a certain amount of unchanged sodium remained in the synthetic rubber. We shall have more to say about the role played by this substance in vulcanization, when we study accelerators of that order. The same thing had already been observed when working with rubbers that were produced on the plantations, and in whose coagulation acetic acid was employed in the place of smoke, and furthermore in whose preparation and after-treatment at the place where the crude rubber was coagulated considerable care was taken to wash the product as thoroughly as possible, so as to remove any impurities that it might contain. In other words the care that was taken to make this rubber as clean and as pure as possible is just what made it impossible to use. This fact was brought to the attention of rubber men, for it seemed very peculiar that a product in whose manufacture such care was taken to remove all foreign matter should give such poor results in comparison with a rubber in which considerable impurities were present. Of course the remedy was easily to be found although many rubber chemists attributed the difficulty to the poor quality of the rubber gum. Then again it was said that too energetic mastication was the cause of this difficulty.

The disastrous results, from the standpoint of vulcanization, that were obtained with chemically pure rubber gums, such as synthetic rubbers, showed in undeniable fashion that the natural products, contained in addition to dimethyl octadiene other substances which had been wrongly considered in the light of impurities and which played a highly important part in the mechanism of vulcanization. These foreign organic materials that had been known for a long time by Weber, Girard, Spence and isolated from the gum by them, are the resins, the sugars and the proteins that are contained in natural rubber.

Weber supposed that their action on vulcanization was more of a physical nature than a chemical, and, in fine, that they appeared to be like the famous elastic hydrocarbon of Seligmann.

When examined under the microscope, these protein matters that are colored black by a silver salt, appear as a fine network surrounding globules of rubber. This attributed to them a certain role in the coagulation process.

Then again from observations that were made in conjunction with a large number of experiments carried out on Hevea latex by Franck, the latter investigator also held to the above theory which was first advanced by Biffin. On the other hand other rubber chemists and technologists maintained that the presence of protein matters in the rubber gum did not have any great influence, if any at all, on the coagulation of the rubber latex. Moreover, Yong and Tromp de Haas easily succeeded in transforming the latex of the Castilloa tree into the form of crude rubber after he had removed all the protein matters that it contained by extraction with alcohol.

Spence and Crossby arrived at the same conclusions after making a number of experiments with the coagulation of rubber latex in dilute condition and Victor Henry and Zimmermann also held to this opinion after they had made a series of profound studies on coalescence with the aid of the microscope.

Then Biffin came back to the problem again and maintained that the coagulation of rubber latex with the aid of acetic acid, in the manner that it was carried out on the plantations, took place in two phases. In one phase the percentage of protein matter was low and in the other it was high, but he concluded that both led to the production of a gum which possessed the same quality, and that consequently from the standpoint of the final product the percentage of protein matter in the latex was of no importance.

Physical Action of Proteins and Resins

All these investigations seemed to attribute to the protein and resinous matters found in the latex and in the rubber a certain effect on the physical results obtained in vulcanization. But there was nothing said regarding their chemical role in that process. This role, which is of the greatest importance, seemed to have escaped the attention of the investigators who busied themselves with these problems.

The first results of experimentation published on this subject, which were in contradiction to this theory, were those of Lock and Bamber. It is certain that at that time Spence was in possession of information which permitted him to take into consideration the influence exerted during the course of vulcanization by the resinous and protein matters contained in the rubber gum. But he did not publish his observations until some time later.

The Work of Lock and Bamber

Lock and Bamber, while they were studying the physical constants of plantation rubbers, observed that their resistance to rupture varies inversely as the content of pure rubber gum in them. They were able to deduce from these observations that the impurities contained in the natural rubber and which many attempts had been made to remove and thus obtain a pure gum, were possessed of an entirely unsuspected importance in determining the quality of the rubber product made by vulcanizing the rubber gum. In other words instead of being detrimental, these impurities were actually beneficial in a marked degree.

It therefore remained for the son of Weber, Lothar Weber, who continued his work in this field and for Stevens and Beadle, consulting chemists of the Rubber Growers Association, to establish the fact that these impurities possessed the happy property of enhancing the good properties of the vulcanized rubber products.

This work, which may be considered to be the preface to the history of accelerators and which may be considered the starting point in their discovery and development, was communicated by the investigators in the International Congress of Applied Chemistry, held in New York City in 1912, and which was attended by Dr. Duisberg of the Bayer Company, Savage, Markwald, Henricksen, Fol, Foa and Whistley.

In the experiments that were made by Lothar Weber, the investigator used a mixture which approximated those that are commonly used in practical work in the industry. These mixtures contained plantation rubber, litharge, chalk and sulphur. The rubber that was employed in these tests was first extracted with the aid of acetone in such a manner that the rubber was entirely freed of its resinous content.

The conclusions reached by Lothar Weber from these experiments were summed up by him as follows: "The resinous matters present in the rubber gum take an active part in the vulcanization process, but they do not act as catalysts. Their presence is absolutely necessary, for the mixtures that were prepared with rubber from which the resinous matters had been entirely removed would not vulcanize."

The Physical Constants

But the physical constants of the vulcanized rubber which were determined by Weber on the samples that he obtained in his experiments were what lead him to make the aforegoing conclusion. He estimated that a minimum content of three-tenths of one per cent of resinous matter was necessary before it become possible to vulcanize the rubber.

The memoir which was prepared by Stevens and Beadle on this subject was even more comprehensive and the scientific accuracy of their work was even more exacting. In this work not only was the influence of the resinous matter in the rubber gum discussed but also that of the protein matter that is likewise found in it.

Thus the first investigations that were carried on by Lothar Weber, Stevens and Beadle cleared up a number of important points which had been very hazy up to the time that they undertook to investigate this matter. They clearly indicated the important roles played both by the resinous matter and the proteins found in the natural rubber during the vulcanization process. They determined the influence of these substances on the physical constants of the vulcanized products and they stated the quasi-impossibility of a compound being formed between the sulphur and the pure rubber gum. In addition thereto they determined the influence that might and is wielded in such reactions by the presence of metallic oxides, such as litharge, in the rubber mixtures.

A New Chapter in Vulcanization

Thus a new chapter in the chemistry of vulcanization was opened, and naturally the first statements made were in reference to certain unproven conditions, both from the standpoint of the industrial man and that of the scientific man.

In the first place the vulcanization of a rubber gum, from which all the impurities and foreign materials have first been removed, is impossible.

The question was naturally asked is it possible to increase the percentage of these impurities in the rubber gum, and determine which of them are most susceptible of reacting more energetically, and while doing this, is it not possible at the same time to increase the rapidity of the combination of the sulphur with the rubber gum ? Is it not also possible to effect this under lower temperature conditions, in a much shorter period of time, and at the same time obtain a product of which the physical constants are just as advantageous as those of the vulcanized rubber that is ordinarily manufactured, if indeed not more so ?

Thus the first and primary conditions of that tremendous problem, which has since been called the acceleration of rubber vulcanization, were established.

Stevens, either in collaboration with Beadle, or alone, pursued a series of experiments in which he attempted to determine the influences exerted by the presence of both resins and protein matters on the speed of the vulcanization reaction. He also investigated the effects of the presence of metallic oxides of various sorts, particularly of the oxide of lead, known as litharge, on the vulcanization reaction.

"Rubber," he said "is always associated with resinous materials for these are always present in the latex, but the form under which these materials are met has been unknown to us up to the present time.

"The globules which are found in the rubber latex may be formed of rubber alone, of rubber mixed with resinous matters, or of these resins alone. If these globules are of different compositions, there is some hope that it will be possible to differentiate between them, by examining them under the microscope, for their indices of refraction will be different."

The report of Stevens' work on resins and proteins will be concluded in the next issue.—The Editor.

EDITOR'S REVIEW DESK

Books **Trade Catalogs** **Articles**

CHEMISTRY IN INDUSTRY. Edited by H. H. Howe, editor of *Industrial & Engineering Chemistry.* Published by The Chemical Foundation, Inc., 85 Beaver St., New York City.

Twenty-one leading industrial chemists have cooperated in the preparation of this volume by furnishing monographs telling of the contributions chemistry has made to their particular industry. The work furnishes in easily-assimilated form an interesting treatise of the relation of chemistry to the industrial life of the United States. It is written in non-technical language for the general reader and cannot fail to interest him.

The role of chemistry in our industrial life is glorified for the authors have gone to great care to clearly and convincingly trace its work to all forms of human endeavor. After laying down the book, one is deeply impressed by the fact that chemistry plays such an important yet inconspicuous part in the most humble life. In selecting industries to be covered in the work, the Committee on Prize Essays of the American Chemical Society was guided by the knowledge that but a few of the industries which deserved a place could be given a chapter in a single volume and picked those it considered typical.

The volume is amply illustrated with charts and photographs which materially add to the interest of the text. In each monograph several unsolved problems are noted to indicate to the thousands of chemical students the opportunities that await the resourceful, imaginative chemist.

W. J. Kelly, of the research laboratories maintained by the Goodyear Tire & Rubber Co., has contributed Chapter XX—"Chemistry in the Rubber Industry." In seventeen pages he has ably covered for the non-technical reader, a subject that other men have not handled as well in a hundred. Mr. Kelly has not been as prone to the mistake made by some of the authors of the other twenty monographs of explaining in simple language a highly complicated process but marring the explanation by failing to define one or two technical words which are so common to the authors that they have made the usual error of thinking them familiar to everyone.

Included among the problems which rubber chemists hope to solve are the structure of rubber itself, the structure of vulcanized rubber, the course of the reaction between sulphur and rubber, the causes of the effects of accelerators, the changes which take place in reclaiming and the action of compounding ingredients.

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BOOKS SCIENTIFIC AND TECHNOLOGIC. 7½″ x 9″. 18 pp. The Chemical Catalog Co., Inc., 19 East 24th St., New York.

Among other books, this list gives the table of contents of "The Analysis of Rubber" by John B. Tuttle, "Plastic and Molded Electrical Insulation" by Emile Hemming and "Systematic Survey of Rubber Chemistry" by Clayton W. Bedford and Herbert A. Winklemann.

Mr. Tuttle's work is too well-known to require comment. Emile Hemming's volume will be found of great value to the specialist in this branch of the rubber industry for he has taken special care in the preparation of the chapter on molded electrical insulating materials, a field in which the author was engaged for nearly twenty years and introduced the process in 1908 now known as cold molded insulation. He has collected for ready reference all the data from the extensive patent literature within the last twelve years.

In their "Systematic Survey of Rubber Chemistry," the authors present a bibliography, with copious abstracts, of the entire literature of rubber chemistry and closely allied subjects. The volume is thoroughly indexed by authors and subjects, and completely cross-refereneed. Introductory chapters summarize the present status of rubber chemistry.

Dr. W. C. Geer in an introduction to this work says in part, "The rubber industry has been in recent years, through its chemists and engineers, more open in co-operative endeavor than during its entire previous history. Indeed, where the industry was formerly known as one of the most secretive, it has now passed many of its contemporaries and has become one of the most open."

Dr. L. B. Sebrell has contributed a section on "Organic Accelerators of Vulcanization" and Dr. W. J. Kelley one on "Theories of Vulcanization." These two sections alone would have made the work a valuable one.

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GENERAL CATALOG. Nestler Rubber Fusing Process and Steamless Adjustable Equipment. 6″ x 9″. 30 pp. Nestler Rubber Fusing Co., Inc., 245 West 55th St., New York, N. Y.

The Nestler process is described as fusing or welding new and old rubber so that they are one and is used for repairing the treads of tires which are yet serviceable. In retreading a tire by this process, it is given a coat of Nestler de-vulcanizing compound with a brush. The compound is then driven into the tread by heat. For the depth of about one-eighth of an inch the tread becomes soft and tacky. Compound No. 2 is then applied, the new, uncured tread rubber applied and the tire clamped in a mold and placed in the curing cabinet

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CLASSIFIED ADVERTISING

POSITION WANTED—Would like to locate with small or medium sized mechanical rubber plant. Have had nine years experience in mechanical and matting rubber goods. Thoroughly understand compounding, mixing, tubing, press work and managing, also lot of helpful manufacturing secrets. Thirty years of age. Can give A-1 references. Will consider any offer. Box 397—THE RUBBER AGE.

MILL ROOM FOREMAN—Wanted in Large Mid-West factory manufacturing tires and tubes. Excellent opportunity. Box 398—Rubber Age.

WE BUY FOR SPOT CASH—Surplus and Odd Lots of Chemicals, Oils, Dyes, intermediates, solvents, gums, glues, waxes, and any item of a chemical nature. Republic Chemical Corp., 303 Pearl Street, New York, N. Y.

CALENDER FOREMAN WANTED FOR LARGE MIDWESTERN PLANT MANUFACTURING TIRES, TUBES, ETC. BOX 399, THE RUBBER AGE.

ASSISTANT SUPERINTENDENT FAMILIAR WITH PRODUCTION OF TUBES AND ACCESSORIES WANTED BY LARGE MIDWESTERN PLANT. BOX 400, THE RUBBER AGE.

FOR SALE—*Rubber tire factory.* Modern, fire proof, for the manufacturing of pneumatic automobile tires and tubes, or suitable for other manufacturing purposes. Center of excellent manufacturing district. 4¾ acres ground. Railroad side track facilities. George A. Crane, receiver Odell Rubber Company, South Bend, Indiana.

MARKETS

Cottons and Fabrics

NEW YORK, Dec. 15, 1924

Prior to the issuance of the final Government crop report on the 8th, a thorough liquidation of long interests took place because it was felt that the estimate would show a crop around 13,300,000 bales, exclusive of linters, which, with linters added, would mean a total available supply of cotton of fully 14,000,000 bales.

The annual estimate of the quantity of cotton grown during the season when issued by the Department of Agriculture showed 13,153,000 bales, compared with 12,992,000 in the previous report. As this proved somewhat less than the majority had expected, a sharp advance of over three-quarters of a cent occurred in near positions and about half a cent in distant months. Census figures on cotton ginned to Dec. 1 showed 12,225,000 bales, compared with 11,147,000 in the previous report and 9,243,000 a year ago. This represented ginnings of 1,078,000 bales for the 17 days, compared with 1,452,000 during the 13 days preceding, or a falling off of 374,000 bales. Last year there was an increase of 61,000 bales during the corresponding 17 days.

Based on the farm price of cotton on Dec. 1, which was 22.6 cents a pound, the year's production is valued at $1,421,356,262. In addition, the value of the cottonseed will be approximately $200,000,000 and the production of linter cotton will probably run into 800,000 or 900,000 bales. This year's crop will be the fifth largest in history in point of value, being exceeded in value by the crops of 1917, 1918, 1919 and 1923. In point of size the crop is the ninth largest grown, the record crop having been 16,135,000 bales in 1914.

On the 9th the market not only lost the entire recovery of the previous day but declined to within a few point's of the low figures of the preceding week. Contracts appeared from various directions, representing liquidations of long accounts, hedges against unsold cotton in the South and operations for a decline. Fluctuation was narrower the following day and, lacking the selling pressure of the two previous days, the market steadied at the decline. A covering movement occurred on the 11th which absorbed a sufficient quantity of contracts to leave final prices

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SPREAD OF ARIZONA WEEVIL FEARED

Cotton growing sections of Texas, heretofore free of boll weevil infestation, are menaced by the Arizona cotton weevil, according to B. R. Coad, in charge of Southern field crop investigations for the Department of Agriculture. The Arizona weevil occurs on a wild cotton plant in the mountains of Arizona. In the last few years the extension of cotton cultivation around Tucson has brought the cultivated cotton close enough to where the wild cotton grows for the weevil to transfer its attention.

J. H. LANE & CO.

Tire Fabrics Cord Fabrics

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250 W. 57 STREET, NEW YORK 226 WEST ADAMS ST., CHICAGO

NEW ENGLAND SOUTHERN MILLS

MANUFACTURERS OF TIRE FABRICS

This group of Mills is thoroughly equipped to produce coarse builders, breakers and chafers in all grades of cotton, in yarn numbers ranging from 4's to 30's in order to meet the demand for coarser yarns and lower cost fabrics.

LAWRENCE & CO., SELLING AGENTS

89 Franklin St., Boston **24 Thomas St., New York**

Cotton Markets

(Continued from Page 195)

2 to 13 points over the previous days.

This covering movement was continued the next day and developed into the most general movement of its kind in some time. After one of the largest day's business in several weeks, prices showed a gain of 27 to 45 points. The week was regarded as probably the dullest cotton-trading week of the season. The movement of cotton into sight for the week showed a decrease of nearly 100,000 bales from the preceding week, the increase in the visible supply decreased sharply compared with the large gain of week before and totaled 464,000 bales, compared with 405,000 for the corresponding week last year.

Exports up to and including the 12th showed an excess for the season to that date of about 900,000 bales in round figures. It is expected that by the end of the present month exports will have exceeded those of last season by a million bales or more.

New York Cotton Prices

	Open	High	Low	Last Sale	Close Dec. 1
December	23.00	23.43	23.00	23.38	23.64
January	23.07	23.52	23.07	23.52	22.80
March	23.51	23.93	23.47	23.92	23.20
May	23.92	24.28	23.83	23.27	23.32
July	24.01	24.90	23.99	24.39	23.37

TIRE FABRICS

Several orders were placed for tire fabrics during the past fortnight. In no instance was the quantity large and the price held to the previous level for carded peeler cords. There was some interest in chafer fabric which was quoted 50 cents for the 14¼-ounce. A little business was also placed for bicycle fabric. Stock lots of constructions that are not wholly standardized may still be had for less than average prices.

It is expected that fabric consumption during 1925 will show a normal increase over the current year. This would mean the spinning of 10 to 15 per cent more yardage. This improved market sentiment has been derived from the tire industry itself which is believed preparing to accommodate a considerably larger consumption of tire fabrics. The purchase of cotton mills by certain rubber manufacturers have not altered the general situation. The fabric mills do not expect much buying to materialize until February. These mills are generally working full time and over. Some of the mills are not able to take on another order for the next six weeks. The selling price has clung closely around 53 cents for the carded peeler cords.

CORD FABRICS			
Combed Sakellarides		Nominal	
Combed Peeler	lb.	Nominal	
Carded Peeler		.53 @	.57
Combed Egyptian uppers	lb.	.66 @	.72
Carded Egyptian uppers	lb.	.62 @	.66
SQUARE WOVEN			
17¼-ounce Egyptian uppers, combed	lb.	Nominal	
17¼-ounce Egyptian uppers, carded	lb.	.60 @	.64
17¼-ounce Sakellarides, combed	lb.	Nominal	
17¼-ounce Peeler, carded	lb.	.51 @	.55

Ducks—There has been a much better demand for single filling duck, of which all quantities have been sold during the last two weeks. Although mills are sold up for the current year, they are looking for new business from January on. Some looms are engaged much further ahead. Orders for hose and belting duck were placed at 45 cents, no freight allowed. All of these orders were under 50,000 pounds. If the frequency and the number of inquiries are to be taken as an indication, there is a great deal of duck to be bought.

Burlaps—A source of strength in burlap values has been the sensational advance in sterling, which rose to a new high for the year. Trading interest has been limited and sales few. It has been found that low price offerings can swing buying interests unless the buyer is actually in the market. Sales were put through for December and early January heavy weight shipments. Traders failed to reduce their asking prices materially when the price tendency eased off.

SHEETINGS			
40-inch 2.50-yard	yd.	.16¼ @	.16½
40-inch 2.85-yard	yd.	.14¼ @	—
40-inch 3.15-yard	yd.	.14¼ @	—
40-inch 3.60-yard	yd.	.12 @	—
40 inch 3.75-yard	yd.	.11¼ @	—
40-inch 4.25-yard	yd.	.10 @	—
DUCKS			
Belting	lb.	.45 @	—
Hose	lb.	.45 @	—
Enameling	lb.	.46 @	.51
Shoe Ducks	lb.	.38 @	—
Single filling	lb.	.19 @	.22½
Double filling	lb.	.22½ @	.24
BURLAPS (Carload Lots)			
7½-ounce 40-inch		8.00 @	8.05
8 -ounce 40-inch		8.10 @	8.15
10 -ounce 40-inch		9.25 @	9.40
10½-ounce 40-inch		9.65 @	10.00
DRILLS			
37-inch 2.75-yard	yd.	.14¼ @	.14½
37-inch 3.00-yard	yd.	.13½ @	—
37-inch 3.25-yard	yd.	.12½ @	—
37-inch 3.50-yard	yd.	.11¾ @	—
37-inch 3.95-yard	yd.	.10¾ @	—
OSNABURGS			
30-inch 7-ounce		.15 @	.15½
40-inch 7-ounce		.16¼ @	—

Reclaimed Rubber

NEW YORK, Dec. 16, 1924

Continued demand from manufacturers has maintained reclaiming plants at almost full capacity and even with the holidays coming shortly, no let-up is in sight. The market is firm and active with demand especially stimulated in high tensile reclaims. Slight increases in quotations are noted evidently following the trend of the crude rubber market. Prices follow:

Friction (Uncured)			
No. 1	lb.	.27½ @	.28½
No. 2	lb.	.10½ @	.11
High Tensile Black			
Super-Reclaim No. 1	lb.	.16½ @	.16¾
" " No. 2	lb.	.12¼ @	.12½
Shoe			
Unwashed	lb.	.08¾ @	.09
Washed	lb.	.12¼ @	.12½
Tube			
No. 1 (Floating)	lb.	.15¾ @	.16
No. 2 (Compounded)	lb.	.10½ @	.11
Tires			
Black, unwashed	lb.	.08¾ @	.09
Black, washed	lb.	.10 @	.10¼
Dark Gray	lb.	.09½ @	.09¾
Light Gray	lb.	.10¾ @	.11
White	lb.	.13½ @	.13¾
Truck	lb.	.08½ @	.08¾
Miscellaneous			
Mechanical Blends	lb.	.05 @	.06
Red, High Grade	lb.	.13½ @	.13¾

Scrap Rubber

NEW YORK, Dec. 15, 1924

Scrap dealers continue to report a firm market with prices unchanged since our last report. Reclaimers demands are still heavy and with present condition of crude rubber market, it is expected that prices of both scrap and reclaim will advance after the first of the new year. Quotations follow:

Auto tire peelings		.01¼ @	.01½
Standard White auto	ton	27.50 @	30.00
Mixed auto	ton	18.00 @	20.00
Bicycle tires	ton	14.00 @	16.00
Clean solid truck tires		.01¾ @	.02
Boots and shoes		.02½ @	.02⅝
Arctics, untrimmed		.01½ @	.01¾
Arctics, trimmed		.01¾ @	.02
Inner tubes, No. 1		.05¾ @	.06
Inner tubes, compounded		.04 @	.04¼
Inner tubes, red		.03¾ @	.04
Battery jars, clean hard rubber		.02 @	.02½
Air Brake Hose	ton	18.00 @	20.00
Rubber Hose	ton	14.00 @	16.00

TIRE FABRICS
OF EVERY DESCRIPTION
TAYLOR, ARMITAGE & EAGLES Inc.
Equitable Building, 120 Broadway, New York
SEA ISLANDS EGYPTIANS PEELERS
FABRICS TO SPECIFICATION
AMERICAN COTTON FABRIC CORPORATION

CHEMICALS & COMPOUNDING INGREDIENTS

Accelerators — Colors — M.R. — Compounding Ingredients
Softeners — Vulcanizing Ingredients — Rubber Substitutes

NEW YORK, December 15, 1924—All producers and dealers continue to report excellent business from rubber manufacturers. The outlook for 1925 is very bright judging from present committments as compared to the corresponding period in 1924 . The rumored amalgamation of independent carbon black manufacturers has not materialized yet but something definite is expected soon. Prices remain firm.

ACCELERATORS

Organic

Aldehyde ammonia, crystals	lb.	$ .90 @	.95
Aniline oil, drums	lb.	.17 @	.17½
Diphenylguanidine	lb.	1.10 @	1.15
Excellerex,	lb.	.40 @	.45
Formaldehyde-Aniline	lb.	.42½ @	—
Hexamethylene-tetramine	lb.	.85 @	—
Paraphenylenediamine	lb.	1.40 @	1.50
Super-Sulphur No. 1	lb.	.50 @	.60
Super-Sulphur No. 2	lb.	.25 @	.35
Tetramethyl— Thiuramdisulphide	lb.	6.00 @	—
Thiocarbanilide, kegs	lb.	.26 @	.32

Inorganic

Lead, sublimed blue	lb.	.10 @	—
Lead, white	lb.	.10½ @	—
Litharge, domestic	lb.	.11¼ @	—
Lime, superfine	lb.	.01½ @	.02
Magnesia, calcined, light,	lb.	.24 @	.25
extra light	lb.	.45 @	.60
heavy	lb.	.04 @	.05

COLORS

Blacks

Arrow "Aerfloted"	lb.	.06¼ @	.10
Bone Black	lb.	.08 @	.11
Carbon "	lb.	.06 @	.11
Drop "	lb.	.07½ @	.10
Ivory "	lb.	.15 @	.45
Lamp "	lb.	.12 @	.40
Micronex	lb.	.07 @	.12
Thermatomic carbon	lb.	.04 @	.08

Blues

Cobalt	lb.	.21 @	.26
Prussian	lb.	.35 @	.37
Ultramarine	lb.	.08 @	.35

Browns

Iron oxide	lb.	.02¼ @	.12
Sienna, Italian,	lb.	.04½ @	.14
Umber, Turkey	lb.	.04 @	.06
Vandyke, domestic	lb.	.03½ @	.04

Greens

Chrome, light	lb.	.28 @	.30
medium	lb.	.30 @	.32
dark	lb.	.32 @	.35
Commercial	lb.	.10 @	.10½

Reds

Antimony crimson, 15/17 F.S.	lb.	.35 @	.39
sulphur free	lb.	.45 @	.60
golden, 15/17 F.S.	lb.	.16 @	.19
calcium and sulphur free	lb.	.40 @	—
red sulph.15-17 F.S.	lb.	.16 @	.20
Indian, English	lb.	.11 @	.12
Para toner	lb.	.90 @	1.00
commercial	lb.	.14 @	.15
Red oxide, reduced	lb.	.04 @	.12
pure	lb.	.12 @	.14
Toluidine toner	lb.	1.80 @	2.10
Venetian red	lb.	.01½ @	.05
Vermillion, quicksilver, English	lb.	1.25 @	1.30
domestic	lb.	.15 @	.25

Whites

Albalith	lb.	.06⅝ @	.06⅝
Aluminum bronze		.55 @	1.25
Lithopone—Akcolith	lb.	.06¼ @	.06⅝
Lithopone Azolith	lb.	.06⅛ @	—
Zinc Oxide—American Process XX red	lb.	.07¾ @	.08¼
Kadox, black label, bags, cars		.11⅝ @	.11⅞
blue " " "		.10⅝ @	.10⅞
red " " "		.09⅝ @	.09⅞
American Azo: ZZZ (lead free)	lb.	.07¾ @	.08¼
ZZ (under 5 per cent leaded)	lb.	.07 @	.07½
Z (8-10 per cent leaded)	lb.	.06¾ @	.07¼
Zinc Oxide—French Process White seal	lb.	.12 @	—
Green seal	lb.	.10¾ @	—
Red seal	lb.	.09½ @	—

Yellows

Chrome, light		.17 @	.18½
dark and medium	lb.	.17 @	.18½
Cadmium Sulphide	lb.	2.00 @	2.50
Ocher, French medium	lb.	.02¼ @	.02½
domestic	lb.	.01½ @	.02½

COMPOUNDING INGREDIENTS

Aluminum Flake	ton	21.85 @	24.50
hydrate light	lb.	.17 @	.18
Ammonia carbonate	lb.	.13 @	.14½
Asbestine	ton	16.00 @	18.00
Barium carbonate	ton	63.00 @	65.00
Barium Dust	lb.	.05 @	.06
Barytes southern off-color,	ton	15.00 @	18.00
Western prime white	ton	22.00 @	23.00
imported	ton	28.00 @	38.00
Basofor	lb.	.04¼ @	—
Blanc fixe, dry f.o.b. works	lb.	.03½ @	.03¾
Carrara filler	lb.	.01¾ @	—
Chalk, precipitated, extra light	lb.	.04¼ @	.05
heavy	lb.	.03¼ @	.04
Clay, China, domestic,	ton	13.00 @	22.00
Dixie	ton	20.00 @	35.00
Blue Ridge	ton	12.00 @	25.00
Langford	ton	12.00 @	26.00
Fossil flour	lb.	.03 @	.05
Glues, extra white	lb.	.21 @	.29
medium white	lb.	.19 @	.25
cabinet	lb.	.17 @	.25
cabinet low grade	lb.	.14 @	.18
common bone	lb.	.09 @	.12
Graphite flake, bbls.	lb.	.06½ @	.12
Lump	lb.	.04 @	.07
Infusorial earth, powdered	ton	60.00 @	—
bolted	ton	65.00 @	—
Liquid latex	gal.	1.25 @	1.35
Magnesia, carbonate	lb.	.10½ @	.11
Mica, powdered	lb.	.07 @	.15
Rotten Stone (powdered)	lb.	.02½ @	.04½
Soapstone, powdered	ton	15.00 @	22.00
Starch, powdered	cwt.	3.97 @	4.07
Talc, domestic	ton	13.00 @	22.00
French	ton	18.00 @	22.00
French, high grade	ton	38.00 @	45.00
Italian	ton	45.00 @	55.00
Terra Alba	cwt.	1.25 @	2.00
Tripoli, white	lb.	.02 @	.02¼
Whiting, commercial	cwt.	1.00 @	1.15
gilder's bolted	cwt.	1.25 @	1.35
English cliffstone	cwt.	1.50 @	—
Paris whiteAmerican	cwt.	1.25 @	1.50
Quaker	ton	13.00 @	15.00
Sussex	ton	8.00 @	16.00
Wood pulp XXX	ton	35.00 @	—
" " X	ton	25.00 @	—

MINERAL RUBBER

Genasco (factory)	ton	50.00 @	52.00
Granulated M.R.	ton	40.00 @	54.00
Hard hydrocarbon	ton	31.00 @	50.00
Soft hydrocarbon	ton	30.00 @	50.00
320/340 M. P. hydrocarbon (c. l. factory)	ton	45.00 @	50.00
300/310 M. P. hydrocarbon (c.l. factory)	ton	40.00 @	45.00
Synpro, granulated, M. R. (factory)	ton	55.00 @	70.00

SOFTENERS

Acids

Acetic, 28%	cwt.	3.12 @	3.37
Cresylic, 97%	gal.	.62 @	.65
95%		.58 @	.61
Muriatic, 20%	cwt.	.90 @	1.00
Nitric, 36 degrees	cwt.	4.25 @	4.50
Sulphuric, 60 degrees	ton	9.00 @	10.00
66 degrees	ton	14.00 @	15.00
Tartaric, crystals	lb.	.29 @	—

Alkalies

Caustic soda, 76%	cwt.	3.60 @	—
Soda ash, 58% C.L.	cwt.	1.43 @	1.45½

Oils

Castor, No. 3, bbls.	lb.	.16¾ @	—
Chinawood, bbls.	lb.	.15¾ @	.16
Corn, crude, bbls.	lb.	.12½ @	.13
refined	lb.	.13½ @	—
Cottonseed, crude		.09½ @	—
Glycerine C.P. Drums	lb.	.19 @	.19½
Linseed, Raw C.L.	gal.	1.05 @	—
Palm, Niger	lb.	.08¾ @	.09
Lagos	lb.	.09½ @	.09¾
Peanut,domestic,crude	lb.	.13 @	—
Petrolatum, white		.10½ @	.11
amber		.03⅞ @	.04¼
dark amber	lb.	.03⅝ @	.03¾
Pine, steam distilled	lb.	.65 @	.70
Rapeseed, refined	gal.	.97 @	.98
blown	gal.	1.10 @	—
Rosin, first rectified	gal.	.45 @	.46
second rectified	gal.	.47 @	.48
Soya Bean, crude		.13¼ @	.13½
Tar, commercial	gal.	.30 @	.32

Resins and Pitches

Parra M.R.	lb.	.06 @	.07
Tar Retort	bbl.	12.00 @	—
kiln burned	bbl.	12.00 @	—
Pitch, Burgundy	lb.	.65 @	.66
coal tar	gal.	.05½ @	.06
pine	bbl.	5.50 @	6.00
Rosin, grade K	bbl.	7.85 @	—
Shellac, Superfine orange	lb.	.67 @	.68

Solvents

Acetone, drums C.L.	lb.	.16 @	.17
Alcohol, denatured, No. 1 bbls.	gal.	.61 @	.65
Benzol, 90%	gal.	.24 @	.25
pure		.30 @	—
Carbon bisulphide	lb.	.06 @	.07
tetrachloride	lb.	.06½ @	.07
Dimethylanline	lb.	.34 @	.36
Motor gasoline, steel bbls.	gal.	.15 @	—
Naptha, V. M. & P.	gal.	.14¾ @	—
Toluene	gal.	.31 @	—
Turpentine, spirits	gal.	.87 @	.88
wood	gal.	.82 @	.83

Waxes

Bayberry	lb.	.21 @	.22
Beeswax	lb.	.48 @	.52
Carnauba, No. 1	lb.	.35 @	.39
Ceresin, white	lb.	.09 @	.10
Montan, crude	lb.	.06 @	.06½
Ozokerite, black	lb.	.24 @	.25
green	lb.	.26 @	.30
Paraffine WhiteA.M.P.	lb.	.05⅝ @	.05¾
Yellow A.M.P.	lb.	.05¼ @	.05½
Sweet wax	lb.	.12 @	—

SUBSTITUTES

Black	lb.	.08 @	.14
White	lb.	.09 @	.15
Brown	lb.	.10 @	.15
Brown factice	lb.	.08 @	.16
White factice	lb.	.08¾ @	.16

VULCANIZING INGREDIENTS

Black hyposulphite	lb.	.18 @	.20
Sulphur Chloride (drums)	lb.	.04 @	.05
Sulphur flour Commercial bags,	cwt.	1.35 @	1.70
" bbls.	cwt.	1.70 @	—
Superfine, bags	cwt.	2.00 @	2.50
" bbls.	cwt.	2.40 @	2.90
100% pure, refined, bags	cwt.	2.35 @	2.60
bbls.	cwt.	2.60 @	2.90

The Market Place

WHERE TO OBTAIN

Machinery, fabrics, chemicals, compounding ingredients, crude and reclaimed rubber, consulting chemical and engineering services, etc.

ACCELERATORS—X L O and Diphenyl Guanidine.

Dovan Chemical Corp.

30 Church St. New York

ANTIMONY Pentasulphide, golden and crimson, very fine, pure.

Rare Metal Products Co.
Tyler Patterson Co.

Belleville, N. J. Cleveland, Ohio

ASBESTINE—Specially prepared for use in Rubber. Send for liberal working sample.

SOLE PRODUCERS

International Pulp Co.

41 Park Row, New York City

BARYTES and other chemicals for the rubber trade.

Cooper & Cooper, Inc.

23 Cliff St. New York City

BARYTES—Resists action of acids, alkalis, oils; 300 mesh.

National Pigments & Chemical Co.

St. Louis, Mo.

BEAD CABLES— National Flat Woven and Pratt Patent Bead Cables.

National Standard Co.

Niles, Mich.

CALENDERS—Embossing, for artificial leather, oil cloth etc.

Textile-Finishing Machinery Co.

83 Exchange Place, Providence, R. I.

CARBON BLACK—*Micronex* the world's standard gas black, universally known as the "King of Rubber Pigments."

Binney & Smith Co.

41 East 42nd St. New York City

To Our Readers

Manufacturers and dealers listed in THE MARKET PLACE are those on whom you can rely for prompt and courteous treatment for all your raw material and equipment requirements. We feel confident that we are rendering both our readers and our advertisers a real service in publishing these listings and should you desire information on other firms or products, the Service Department of THE RUBBER AGE will be pleased to assist you.

CARBON BLACK

nine grades for the rubber industry.

Godfrey L. Cabot, Inc.

938-942 Old South Bldg. Boston
611 Metropolitan Bldg. Akron

CARBON BLACK—*Aerfloted* Arrow Black for rubber compounding. Standard for grit-free uniformity.

J. M. Huber, Inc.

130 West 42nd St. New York

CHEMICALS— Solvents and accelerators. *Clay, whiting* and other compounding materials.

E. L. Bullock & Sons, Inc.

99 John St. New York City

CHEMICALS and compounding ingredients for the rubber trade.

Harshaw, Fuller & Goodwin Co.

Cleveland, Ohio

CHEMICALS and compounding ingredients; Clay, Whiting, Accelerators, Mineral Rubber.

R. T. Vanderbilt Co.

50 East 42nd St. New York City

CHEMICALS and pigments for the rubber trade. Complete stocks carried.

Wishnick-Tumpeer Chemical Co.

Chicago Cleveland Brooklyn

CRUDE RUBBER — All Grades. Washed - Dried - Milled. *Send us Your Inquiries.*

Gibraltar Rubber Corp.

West New York, N. J.

DIXIE CARBON BLACK

Unexcelled in rubber work for toughness and resiliency.

United Oil & Natural Gas Products Corporation

30 Church St., New York City

DRY KILN—for drying crude rubber and chemicals—Hunter Process.

Carrier Engineering Corporation

750 Frelinghuysen Ave. Newark, N. J.

FABRIC BROKER— Spots and Contracts: Tire fabrics, Enameling ducks, Tube Wrapping Tapes.

H. Frank Jones

395 Broadway New York City

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ALL THE LEADERS

Are represented in this section. Purchasing agents can rely on the concerns listed as thoroughly reliable in every way.

The Market Place

FABRICS—Tire fabrics, Egyptian—Peeler, Karded and Combed, Cord and Square.

Cabarrus Cotton Mills
(Cannon Mills, Inc.)
55 Worth St. New York
327 S. La Salle St. Chicago

FABRICS—Tire fabrics—coarse builders, chafers, breakers in all grades.

New England Southern Mills
LAWRENCE & CO.
24 Thomas St. New York
Boston, Philadelphia, Chicago, St. Louis, San Francisco

FABRICS—Tire, cords, enameling ducks, drills, sheetings, osnaburgs.

J. H. Lane & Co.
250 West 57th St. New York City

FABRICS—Tire fabrics of every description, Sea Island, Egyptians, Peelers.

Taylor, Armitage & Eagles, Inc.
120 Broadway New York

FABRICS—Stockinets, Jersey Cloth and Special Fabrics for the Rubber Industry.

U. S. Knitting Co., Inc,
Pawtucket, R. I.

FACTICE—Prevents blooming, makes colors fast and a smoother batch.

Stamford Rubber Supply Co.
Stamford, Conn.

GUAYULE—"Duro" Brand washed and dried ready for compounding.

Continental Rubber Co.
120 Broadway New York

HARD RUBBER, quality hard rubber goods of every description.

Vulcanized Rubber Co.
251 Fourth Ave. New York City

HEEL BURRS—with central holes; flat and cupped.

J. H. Sessions & Son
279 Riverside Ave. Bristol, Conn.

LINERS — PROCESSED
For
Various Rubber Stocks

The Cleveland Liner & Mfg. Co.
5508 Maurice Ave., Cleveland, O.

METAL BRANDS, TAGS
Name Plates, Labels — Machinery for making.

Roovers Bros.
100 Schermerhorn St.
Brooklyn, N. Y.

MOLDS & CORES—Tire building machines; tire finishing stands; tubing machines; hydraulic presses.

The Akron Standard Mold Co.
Akron, Ohio

MOLDS & CORES—for automobile tires; general machine work.

Kuhlke Machine Co.
Akron, Ohio

RECLAIMED RUBBER—Uniformity, reliability, cleanliness.

Pequanoc Rubber Co.
Butler, N. J.

RECLAIMED RUBBER—for all purposes.

Rubber Regenerating Co.
Naugatuck, Conn.

RECLAIMED RUBBER
A standardized grade for every requirement.

U. S. Rubber Reclaiming Co., Inc.
100 E. 42nd St., New York, N. Y.
"42 Years Serving the Industry Solely as Reclaimers"

RED OXIDE—A special grinding, guaranteed uniform in color and quality.

Joseph A. McNulty
114 Liberty St. New York City

RUBBER—Crude and scrap, all grades.

H. Muehlstein & Co.
Liggett Bldg. New York
Akron, Chicago, Boston, Hoboken

RUBBER SUBSTITUTES
White, brown and black.

Carter Bell Mfg. Co.
150 Nassau St. New York

RUBBER TESTING APPARATUS
Bierer-Davis Rubber Aging Apparatus; Rubber Buffing Machine for preparing tensile strength samples.

Emerson Apparatus Co.
171 Tremont St., Melrose Highlands, Mass.

YOUR MESSAGE IN THIS SPACE WILL PUT YOUR NAME ON MAIN STREET.

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The Market Place

SOLVENT RECOVERY EQUIPMENT
50 to 90 Per Cent Recovery
Spadone Machine Co., Inc.
15 Park Row New York
Exclusive Selling Agents for
BENZINE CONDENSATION CO.

TIRE BUILDING EQUIPMENT
MOLDS & CORES
The Akron Rubber Mold & Machine Co.
Akron, Ohio

SOLVENTS — Accurately refined for the rubber industry.
Hartol Products Corporation
192 Market St. Newark, N. J.

VALVES — Tire valves, caps, insides, pressure gauges.
A. Schrader's Son, Inc.
Brooklyn, N. Y.

SULPHUR—*"Tire"* Brand Superfine; *"Tube"* Brand Velvet; quality Sulphur for the rubber trade.
Stauffer Chemical Co.,
of Texas.
Scanlon Bldg. Houston, Texas
San Francisco, Cal. Chauncey, N. Y.

WHITING & PARIS WHITE
manufactured from *Genuine English Chalk* and *Cliffstone*—no adulterations.
Southwark Mfg. Co.
Camden New Jersey

THERMOMETERS–Recording, controlling temperature and pressure controllers.
American Schaeffer & Budenberg Corp.
Berry & South Fifth Sts., Brooklyn

ZINC OXIDES—A Z O, the Super Zinc.
American Zinc Sales Co.
P. O. Box 1428 Columbus, O.
Pierce Bldg. St. Louis
Prudence Bldg. New York

THERMOMETERS—Dial-Indicating, Recorders, Controllers, etc.
C. J. Tagliabue Mfg. Co.
18-88 Thirty-Third St.
Brooklyn, N. Y.

ZINC OXIDES — Including KADOX and "Albalith."
The New Jersey Zinc Sales Company
New York Pittsburgh Chicago
Cleveland San Francisco

Crude Rubber

During the past fortnight the rubber market reached new heights when on the 8th of the month, the highest level reached in over three years was recorded. After a rise extending over several days 37⅞ was reached on the above date. Since then however, prices have declined somewhat and the market is rather inactive at the present writing.

From the activities of rubber manufacturers, it is easy to see that supplies of crude are low. Most of the sales recorded have been for immediate shipment with very few inquiries for futures reported. It is stated in some quarters that manufacturers will need over 30,000 tons this month, an amount exceeding the average of the first ten months by 4,000 tons. Imports for the first ten months of 1924 totaled 261,000 tons compared with 258,000 tons in 1923.

London stocks have continued to decline with withdrawals of last week bringing total stocks on hand to 32,722 tons for the week ending Dec. 6.

The beginning of the month found the market active with London firm. Local quotations advanced ⅜ c. with sales reported at 35⅞ for first latex spot.

The advance which ended several days later in the new high already mentioned, started on the 4th, following sudden activity in London. The local market immediately followed with an upward tendency and 36½c. was reached during the day. Demand continued good.

The next day saw a continuance of the rise and sellers expected to relapse. London continued active and local dealers followed that market with interest. Buyers had already begun to take the new levels for granted and were showing renewed interest. Closing was at 36¾ c. The week ended with quotations up ¼ c.

Contrary to usual Monday openings, the market opened strong on the 8th and before the day was over the new high of 38 c. was reached. London continued to advance during the day. At one time during the session 38½ was reached but the closing was ½ c. lower. On the following day the market became cautious with buyers withdrawing and prices receded slightly. For the balance of the week the market was inactive and quotations fell off to 37⅜ at the end. Buyers ideas were somewhat lower than sellers and little actual business was reported. The present condition of the market is the usual lull after a period of activity and it is expected that we are in for another flurry upwards rather shortly. Closing quotations are as follows:

NEW YORK MARKET

Plantations—			
Ribbed Smoked Sheets.			
Spot	.37½	@	—
January	.37½	@	—
January-March	.37½	@	—
Apr.-June	.37⅜	@	—
First Latex, crepe, spot	.37½	@	—
Amber Crepe No. 1, spot	.37½	@	—
" " No. 2,	.37¼	@	—
" " No. 3,	.37	@	—
" " No. 4,	.36½	@	—
Brown Crepe, Rolled	.36¾	@	—
" " Clean, thin	.37¼	@	—
" " Specky	.37½	@	—
Scrap, Colombo No. 1	.27	@	—
Pontianac—			
Bangermassin	.06½	@	.07½
Palembang	.08	@	—
Prime Pressed	.13¼	@	.13¾
Sarawak	.07½	@	.08
Paras—			
Up-river Fine	.26½	@	—
" Medium	.34¼	@	—
" Coarse	.26½	@	—
Islands, fine	.31	@	—
Madeira Fine	.35	@	—
Acre Bolivian, fine	.33	@	—
Cut Beni Bolivian, fine	.33¾	@	—
Tapajos, fine	.31½	@	—
Caucho Ball—			
Upper, shipment	.26½	@	—
Centrals—			
Central, scrap, prime	.24	@	—
Corinto, scrap	.22½	@	—
Esmeralda, sausage	.24	@	—
Guayule, w and d	.29	@	—
Africans—			
Benguela, No. 2	.17	@	—
Congo, upper, black	.26	@	—
" " red	.25	@	—
Kassai, Prime Red	.24	@	—
Balata—			
Block, Colombia	.48	@	.50
" Cuidad	.63	@	.64
Surinam, sheet	.76	@	.77
Gutta Percha—			
Siak	.18	@	—
Red Macassar	3.00	@	3.20
Chicle—			
Mexican, Yucatan	.64	@	.68

LONDON MARKET

Standard Ribbed Smoked Sheets—	
Spot	18⅜d
December	18⅜
Jan.-Mar.	18½
Apr.-June	18½

SINGAPORE MARKET

Standard Ribbed Smoked Sheets—	
Spot	18 d
December	18
Jan.-Mar.	18
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"SILVER SHEEN"

MICA

NON-METALLIC **WATER GROUND**

Highest Grade for Rubber Industries

Pure—finely powdered—For use in tread stocks, repairing tires, in air bags, inner tubes and various kinds of molded mechanical goods.

Desirable as it is a Toughener and Heat Resister

THE HARSHAW FULLER & GOODWIN CO.

CLEVELAND, OHIO

SALES AGENTS
for
RICHMOND MICA CORPORATION
RICHMOND, VA.

Stocks Carried at

Cleveland. O. **Richmond, Va.**

WE EXTEND OUR WISHES

FOR A

HAPPY AND PROSPEROUS

NEW YEAR

H. MUEHLSTEIN & COMPANY, Inc.

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BOSTON CHICAGO